What role have Sterling overvaluation, fear of devaluation and the demise of UK manufacturing played in the relative decline of the UK economy, and how can this decline be reversed?

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Abstract

For over a century the UK has experienced relative long-term economic decline, as evidenced by its disproportionate loss of world trade and slow growth rate when compared to Germany and other OECD economies. This thesis examines whether sterling overvaluation has been the cause of this decline and the UK's current economic dilemma.

Thirlwall, (2011) wrote:

> 'foreign exchange is a major constraint on the growth performance of many poor countries and that with improved export performance and a lower income elasticity of demand for imports, they would grow much faster.'

Would a more competitive pound relieve the UK of a balance of payments constraint or would it cause inflation, depress living standards and leave structural problems unaddressed?

The thesis analyses the pro and anti-devaluation arguments. The pro-devaluation demand-side argument rests on the supposition that UK economic policy has long favoured finance over industry causing sterling to be overvalued, arguably since its original overvaluation in 1711[1]. This has drawn investment and human capital away from manufacturing which in turn exacerbates supply-side deficiencies.

The UK's long-term trade deficit on goods has been financed through a combination of a surplus on invisibles and a reliance on income from overseas assets. In this decade net income streams have turned negative leaving the UK dependent on foreign direct investment and further sell-offs of UK assets both at home and abroad.

The thesis argues that this is unsatisfactory because:

1. In the short and medium-term it creates unemployment and a hugely unequal and polarised society.

2. In the long run it is unsustainable, as when there are insufficient assets left to sell, the inevitable unplanned exchange rate crash will occur.

[1] In 1711 Newton, as Master of the Mint, reluctantly valued sterling at £3 17sh 6d to the ounce of gold; see page 93 for concluding summary on this theme.

The thesis finds that overvaluation causes a lack of investment in those parts of the economy where productivity increases are readily achieved and a lack demand which induces either deflation or the unsustainable substitution of private debt. When private debt creation slows, this induces a rise in government debt. Without a competitive currency, the UK faces a balance of payments constraint or a burgeoning and unsustainable debt burden. This exacerbates inequality and risks the breakdown of consensual politics.

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Note on terminology:

Throughout this paper the words devaluation (from the fixed exchange rate era and depreciation (from the floating exchange rate era) may be used interchangeably.

UK Balance of Payments (BOP) problems are often Balance of Trade (BOT) problems, as by definition the BOP has to balance. The terms may be used interchangeably, with the context making the meaning clear.

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I am indebted to John Mills who, along with Bryan Gould, produced publications from the 1980s onwards which first alerted me to the issues raised in this thesis.

1 Introduction

This thesis adopts the premise, espoused by Jeff Powell,[2] that 'the particular should be examined within the totality and that one should be wary of mono-causal explanations'. In line with Post-Keynesian insights, it regards economies as path-dependent organisms where bank creation of money and debt profoundly affects outcomes.

Heterodox economists suggest recent western economic woes are exacerbated by:

1. Wage suppression in countries which have wage-led aggregate demand (as per Lavoie, M., and Stockhammer, E. 2012).
2. The burden of debt imposed by the increased financialisaton of the neoliberal era, in which industry serves banking instead of banking serving industry (Table 1 Appendix 1).

This thesis proposes a third cause, that of overvalued currencies.

Overvaluation impacts on policies of wage-led reflation. Raising wages in an open economy such as the UK hits exports and thereby reduces domestic demand as consumers choose imports over domestic products; domestic production consequently faces lay-offs or shut down. This can induce governments to unwittingly encourage household debt as a substitute for wage and export demand.

Similarly, while the City loads the UK economy with private debt, the foreign currency it draws in to the UK via asset and bond sales, props up an overvalued pound.

Each Chapter will progress the argument as follows:

Chapter 2, the Literature Review, first lays out key concepts within the thesis: the importance of manufacturing, the Balance of Payments Constraint (BPC), the

[2] Greenwich University 11th May 2017 12.00 -13.45 Queen Anne court room QA20 Marxist theory of financialization

Marshall-Lerner Condition and aspects of exchange rate determination. It then summarises the anti-devaluation and pro-devaluation arguments.

Chapter 3 scrutinises the arguments. It provides historical evidence that devaluations need not cause inflation. It highlights the significance of the difference between average unit labour costs (ULCs) of all goods and the ULCs of internationally traded manufactures. It suggests that studies finding the Marshall-Lerner condition does not hold ignore the non-linearity of price elasticity of demand. Finally, it analyses why Exchange Rate Pass-Through (ERPT) can be so low.

Chapter 4 shows how the exchange rate impacts on exporting firms' profitability. It counters key objections to devaluation.

Chapter 5 defines overvaluation and looks at the socio-economic consequences of allowing invisibles and capital flows to dominate the UK exchange rate. It explains why trade flows have always played a subordinate role in determining sterling's value.

Chapter 6 provides heuristics for determining the level of devaluation needed to set the UK on a sustainable path of economic growth, eliminating the balance of payment constraint and excessive private and public debt. It then draws together some macroeconomic conclusions.

2 Literature review

This review starts by introducing the historic debate around manufacturing, the Balance of Payments Constraint (BPC) and the Marshall-Lerner condition; it then reviews the anti-devaluation and pro-devaluation arguments.

2.1 The Balance of Payments Constraint (BPC)

This thesis contends that manufacturing has always been the driver of rising living standards, that manufactures are price sensitive and that exchange rates determine whether an economy's manufactured goods are competitive. If they are, a healthy manufacturing sector enables economies to grow quickly and sustainably through path dependent growth; if they are not, growth leads to rising

trade deficits imposing a BPC on the economy***.*** ***If*** devaluation caused commensurate inflation, after nominal devaluations price rises would leave the real exchange rate unaltered, so economic policy would have to concentrate solely on supply-side solutions to escape the BPC.

In the Gold Standard and Bretton Woods era, countries with trade deficits had to part with gold and could not run up deficits indefinitely. The tension for the UK was between achieving economic growth on the one hand and keeping the deficit to manageable proportions on the other. Whenever the economy expanded too fast, imports rose faster than exports: the UK's marginal propensity to import was too high. Thirlwall and Gibson (1992) regard this as a 'structural problem' and assert that growth must therefore be suitably contained. After World War Two this led to the notorious 'stop-go' years. Whenever growth increased, the balance of payments would deteriorate and the government would 'slam on the brakes', a policy reversal that induced deflation.

Thirlwall (1979) hit upon a simple but powerful formula for explaining the equilibrium growth rate of any economy, christened 'Thirwall's Law'. He regarded this as a dynamic version of Harrod's foreign trade multiplier. Thirlwall (2011, p.10) alludes to '…forty years' evidence that since 1971 exchange rate changes are not an efficient balance of payments adjustment weapon. Currencies appreciate and depreciate and still massive imbalances remain.'

His law is:

1) $y_B^* = E(Z)/\pi$

where, y_B^* = growth rate of income

E = income elasticity of demand for exports

Z = world income

π = income elasticity of demand for imports.

The weaker version is:

2) $y_B^{**} = x/\pi$,

where X = export growth.

Thirlwall (2001) states it is changes in expenditure and output, not price changes, that equilibrate an economy, in line with Post-Keynesian thinking that supply and demand imbalances are equilibrated by changes in quantity rather than price. He deduces that the UK has a structural supply-side problem. If growth is to be maintained in balance of payments equilibrium, then the marginal propensity to import is the key factor. The lower it is, the less the BPC and the faster an economy can grow, and vice versa.

Dr John McCombie, (1993), summarising Thirlwall, emphasises that if an economy faces a BPC, borrowing to finance it cannot go on for ever as eventually (he suggests this is when the government debt to GDP ratio is over 50%) lenders get nervous. This rejects the supposition of Modern Monetary Theorists (Randal-Wray, L. 2012 and Mosler, W. 2010) that deficits are irrelevant when foreigners are happy to buy a country's debt denominated in its own currency.

Depreciation is rejected because it causes inflation which prevents gains in competitiveness and leaves supply-side issues unaddressed.

2.2 The Marshall-Lerner Condition

Opposing the above supply-side analysis is the theory that export and import volumes are driven by price, i.e. tradeable goods are price elastic. When devaluation causes export prices to fall, volumes will increase, and as import prices rise, import volumes will decrease. The Marshall-Lerner condition, the neoclassical metric for determining whether devaluation will reduce a trade deficit, is that export and import price elasticities must sum to greater than one. If so, a combination of the positive increase in net export volume and fall in import volume, will more than fully offset the rise in import prices and the fall in unit export prices.

Thirlwall (Ibid,) concedes that if a 'deterioration in the terms of trade is more than offset by a reduced volume of imports and increased volume of exports, then devaluation ***would*** address a trade deficit. He and McCombie argue that for the UK, price elasticities are too low for this to occur. The UK needs supply-side remedies, not devaluation.

2.3 Exchange Rate Determination

Neoclassical exchange rate models assume nominal exchange rates are determined by flows of supply and demand for goods and services. Exports raise demand and the currency's price, and imports vice versa. If another country's prices of traded goods are cheaper this induces extra demand for them, while in the home country, higher prices reduce demand. The price of the respective currencies therefore shifts to equilibrate prices. This currency adjustment removes the price differential between the countries so that the Law of One Price (LOP) and Purchasing Power Parity hold, at least in the long run. Unfortunately for all these models, the evidence is that the LOP does not hold, except occasionally and perhaps in the very long run, Harvey (2010, p.15 and p. 29 and throughout).

Neoclassical models assume that financial flows and capital movements follow movements in trade; they regard money as white noise facilitating trade flows.

Heterodox economists also assume that nominal exchange rates are determined by flows of supply and demand, but have capital flows as dominant; they emphasise the importance of currency traders' expectations in determining short term flows and consequent fluctuation in currency prices.

These flows are independent of trade, based on the empirical record as examined by John Harvey (Ibid, p.64.). Harvey (Ibid, p.7) notes:

> 'although trade flows (the real sector) can impact the currency price, the far larger and more volatile movements of short-term capital take center stage in today's economy. They are cause and not effect….'

This explains why the UK has been able to run a trade deficit since 1985. This is explored in Chapter 5.

2.4 Six Hypotheses Opposing Devaluation

To oppose devaluation 'supply-side economists' employ six interrelated arguments.

The first asserts that devaluation causes inflation due to the increase in price of imports and imported inputs, which prevents increased price competitiveness, as summarised by Nam, S-W. and Kim, S-J. (1999, p. 251):

> 'Devaluation is believed to have no lasting effect because inflation accelerates such that the relative price of domestic goods tends to return to the predevaluation level.'

Like the pro-devaluation case, it relies on price being the driver of export and import volumes.

The second argument is that for the UK, traded goods are not price sensitive; it is ***non-price factors*** that count.

The third closely related argument dismisses devaluation as a tool for eliminating trade deficits, on the empirical basis that countries with trade surpluses tend to have ***appreciating*** currencies.

The fourth hypothesis is that undervaluation in fact worsens BOP problems, first by encouraging excess home demand which attracts more imports at higher prices and secondly, by an 'ossification effect' (Thirlwall and Gibson 1992, Preface and pp. 355-356). The latter proposes that prices do drive net exports in the short run; however, by prolonging the life of inefficient firms, devaluation weakens the balance of trade (BOT) in the long-run.

The fifth argument is that for the UK the Marshal-Lerner condition does not hold due to the low price-elasticities and high income-elasticities of UK exports and imports respectively.

The sixth argument is a catch-all hypothesis that devaluation is irrelevant as a policy tool because governments cannot control exchange rates. They are determined by market forces.

The next sections flesh out these arguments.

2.4.1 Devaluation Causes Inflation

Thirlwall and Gibson (Ibid, p. 241) support the inflation argument and believe competition in world markets and/or domestic price inflation erodes any gain in competitiveness. This assumes, contrary to their other arguments, that prices are a relevant metric; Appendix 2 quotes such assertions from their book. Depreciation raises import prices fuelling inflation. Export growth thus fails to materialise and consumers face falling living standards.

However, they did not fully analyse the inflationary process, which is examined in Chapter 3.6.

2.4.2 Non-price factors determine the Balance of Trade (BOT)

Switching tack, Thirlwall and Gibson assert that devaluation cannot work because UK costs and prices have little bearing on exports. Focussing on the BOP crisis prior to the 1967 devaluation, they assert that the UK's wage costs played no part in making the UK uncompetitive: they cite MacGeehan (1968) who found that from 1960 to1965 ULCs grew more slowly in the UK than in the rest of Europe.

They also cite Ray (1966) who shows that from 1958 to 1964 UK wage costs per unit of output rose 11%, compared with 12% in Japan and Italy, and 22% in West Germany. In other words, UK price competitiveness did not deteriorate. Ray (Ibid, pp. 21-22) shows the UK had the lowest hourly wages of all industrial countries in 1964. From this Thirlwall & Gibson, and Ashcroft (1996) deduce that reducing costs, if this ***were*** possible through devaluation, would not aid the BOT.

They provide extensive empirical studies showing that the price elasticity of demand for UK exports is too low for the Marshall-Lerner condition to be met. When demand increases in foreign economies they look elsewhere for imports. After the heavy depreciation of sterling in the 1970s exports rose less than the growth in overseas economies, while imports failed to contract. They infer it is the nature of the products on offer, not their price, that affects the BOT; they quote qualitative research analysing which non-price factors are to blame.[3]

[3] For a contemporary analysis of German non-price competitiveness see Storm and Naastepad, 2014.

We subdivide their non-price factors into four broad categories.

(i) Market share/geographical share hypotheses claim the economy is producing goods which are not in sufficient demand or are aimed at the wrong markets. This is the unfavourable market-wrong product argument.

(ii) Poor quality: goods are poorly designed, have the wrong function or are unreliable. They may also suffer from poor after sales service and poor marketing.

(iii) Management: UK companies are badly managed; they have poor human capital.

(iv) Lack of capacity holds back exports and domestic substitution of imports. This argument finds that investment is too low and may be combined with a lack of investment in R&D. As a result, the economy's aggregate ICOR[4]* is too high, i.e. its inverse/reciprocal, the SRRC[5], too low.

The evidence they collate, (Appendix 3, Parts A & B) broadly rejects (i), but supports the other three categories. Having severely indicted UK manufacturing for these supply-side weaknesses, the authors proceed to the notorious Kaldor Paradox, that the BOT has a positive correlation with exchange rate movements.

2.4.3 The BOT has a positive correlation with exchange rate movements

In this third argument, Thirlwall and Gibson (Ibid, p.75) point out that Triffin (1978) and Kaldor (1978) show that the correlation between the BOT and currency appreciation appears to have the wrong sign and thus refutes the pro-devaluation solution.

Five surplus countries, Japan, Switzerland, Germany, Holland, Belgium and Luxembourg increased their surpluses from 1972 to 1977, as their currencies appreciated, while the deficit countries of US, Canada, UK, Italy and France

[4] * ICOR = Incremental capital to output ratio: lower equals better.

[5] The return to an individual investor is lower than the return to the economy as whole, the latter being the Social Rate of Return on Capital (SRoR). This includes all the multiplier effects throughout the whole economy which are triggered by the initial investment.

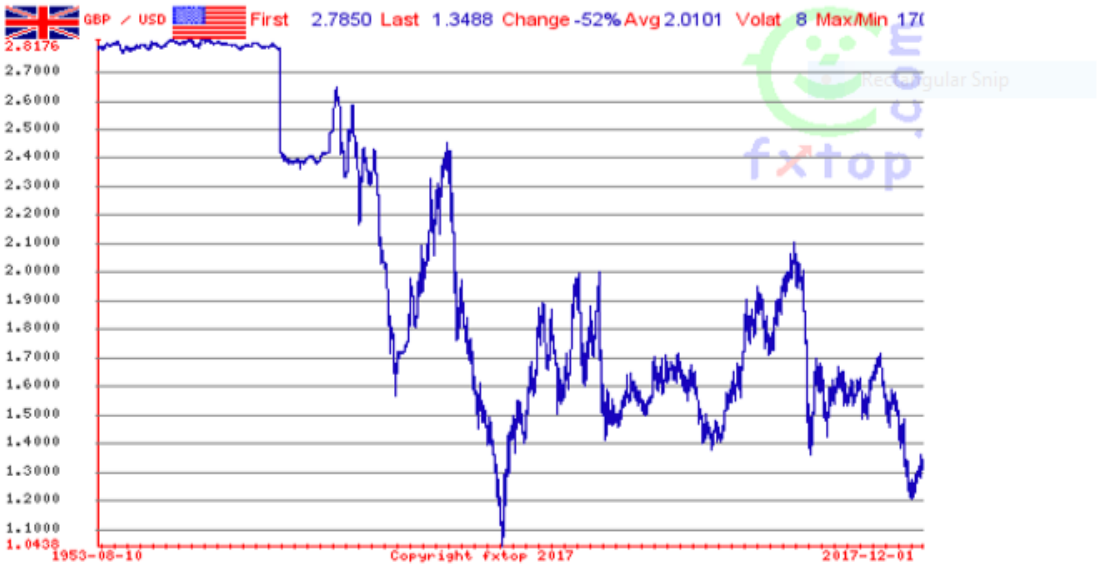
increased their deficits while their currencies depreciated. They note that ***reductions*** in trade deficits correlate with currency appreciation, and vice versa. They surmise that good supply-side policies raise productivity and exports, thereby facilitating trade surpluses.

Likewise, Ashcroft (2010), points to the long-term decline of sterling and asserts:

> 'If devaluation was (sic) a cure for the British Economy, the UK should be one of the strongest economies in the Western world. After all, in 1980 the exchange rate against the dollar was $2.20 compared to $1.45 today. In 1945 the Dollar Exchange rate was $4.03'.

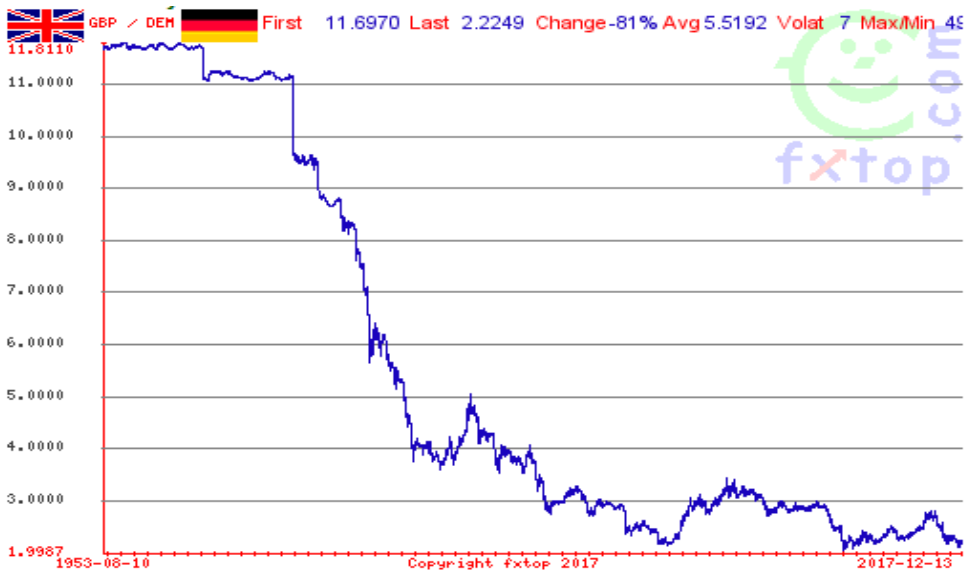
Figures 2A and 2B illustrate his point.

Figure 2 A: Sterling's Decline against the US Dollar. 1 Jan. 1953 to 12 Dec. 2017



Source: fxtop.com/en/historical-exchange-rates.php Accessible at: http://fxtop.com/en/historical-exchange-rates.php?A=1&C1=GBP&C2=USD&DD1=01&MM1=01&YYYY1=1953&B=1&P=&I=1&DD2=09&MM2=12&YYYY2=2017&btnOK=Go%21 (Accessed 4th December 2017).

Figure 2 B: Sterling's Decline Against the Deutschmark 1st Jan 1953 – 12th Dec. 2017



Source: http://fxtop.com/en/historical-exchange-rates.php?A=1&C1=GBP&C2=DEM&DD1=01&MM1=01&YYYY1=1953&B=1&P=&I=1&DD2=13&MM2=12&YYYY2=2017&btnOK=Go%21 (Accessed 14th December 2017).

2.4.4 Undervaluation worsens BOT problems

In the fourth argument Thirlwall and Gibson (1992, p.237) state that devaluation worsens balance of payments problems, by citing Harrod (1968a, 1969 b): 'the source of the United Kingdom's difficulties was not an overvalued pound, but an undervalued pound causing excess demand at home.'

With an undervalued currency and insufficient demand restraint, the economy continues to suck in imports rendered more expensive by devaluation. Supply-side weaknesses prevent import substitution, so the BOT worsens.

To reinforce this argument, they present an 'Ossification Effect' theory. Depreciation gives a temporary reprieve to older poor-quality export products. This reduces incentives to produce newer and better-quality products that would address the trade deficit. In support, they cite Brech and Stout (1981). They constructed a trading up and trading down index for 40 categories of goods in the UK machine tool sector. Between 1970 and 1980 they found that depreciation correlated with trading down, i.e. the substitution of low for high unit value goods.

They conclude that the UK responds slowly for ***structural and institutional*** reasons to market or technological changes and that depreciation just temporarily prolongs the life of obsolete products (Ibid, p. 355).

2.4.5 The Marshall-Lerner Condition is not met

Ashcroft (1996) endorses Thirlwall and Gibson's scepticism about the UK's ability to meet the Marshall Lerner condition. His estimates show that 'demand coefficients are dominant'. Exports are relatively price inelastic, while imports are so price inelastic that there is hardly any substitution effect. However, exports and imports are ***income*** elastic, being sensitive to external and domestic demand respectively.

He allows that when economies were less open, in the 1960s and 70s, price elasticities may have summed to well above unity, unlike in the 80s and 90s. He quotes evidence (Ibid, p. 214) from Bean (1991) that even when Marshall-Lerner conditions were supposedly met, the attempts to expand the economy in 1953, 1959, and 1963, resulted in increased output and sales but a ***worsening*** BOT.

Thereafter he detects a gradual reduction in price elasticity of demand:

Table 2 Declining UK Price Elasticities

Export Price Elasticities

Hutton and Minford	1975	1.5
Duffy and Renton	1970	2.5
Houthakker and Magee	1969	1.24
Junz Rhomberg	1965	1.86 short run
Junz Rhomberg	1965	2.27 long run

Lagged price elasticities: The longer a devaluation is sustained the more import substitution will occur;

	Year 1	Year 2	Long run	Period
London Business School	0.37	0.39	.99	(51-76)
Cambridge	0.35	1.23	2.36	(60-76)
NIESR	0.46	1.13	1.61	(61-75)
Treasury	0.26	0.65	1.30	(66-76)

Price Elasticity for Imports:

Treasury	1988	0.65
Whitley	1979	0.50
Anderton & Desai	1988	0.42

Source: Tables 1, 2 & 3 in Ashcroft (1996, p.234-235) on Diminishing Price Elasticity of Demand for UK Exports and Imports over the decades.

He cites Ball, Burns and Laury (1977) who went further, reporting no significant relationship between relative price and demand for imported goods.

Ashcroft (Ibid, pp. 214-216) argues that in the 50s, 60s and 70s the stop-go policies caused by the UK balance of payments constraint, had a ratchet effect with the result that every 'go' was less successful than the last. 'Increases in import penetration on the upswings were not matched by equivalent decreases in the downturn' (Ibid, p215). This led to increasing capacity problems and to manufacturing being increasingly dependent on imported inputs.

Import substitution was too weak to address the BOT problem.

Ashcroft (Ibid, pp.246-256) references numerous inconclusive studies that address this question in the 1980s. **Capacity** emerges as the key factor. He concludes (Ibid, p. 255) that 'manufacturing output is dominated by changes in domestic demand or income rather than changes in price competitiveness'. We interpret these findings in Chapter 3.

2.4.6 Governments cannot control exchange rates

This sixth anti-devaluation argument simply states that Governments cannot control exchange rates, as they are determined by market forces.

Government intervention will either come to nought or do harm. Markets see what the government is doing and react. In so doing the 'underlying equilibrium' of an economy will reassert itself and any structural problems will persist. The market knows best on everything, including exchange rates. This is scrutinised in Chapter 2.6.8.

2.5 Conclusion

Thirlwall and Gibson (1992. Preface p. x), summarise their case categorically:

> 'The problem cannot be tackled by exchange rate depreciation or monetary manipulation. It requires real economic policies of a structural nature related to the wider characteristics of goods, such as their quality, design, reliability, marketing and delivery.'

2.6 The Pro-Devaluation Case

The pro-devaluation case argues that devaluations relieve BOT problems and increase growth and real wages. It rests on seven interrelated hypotheses: first, productivity growth depends on economic growth rather than vice versa; secondly, manufacturing and technology are the source of growth; third, firms face flat or falling cost curves; fourth, services cannot offset manufacturing deficits; fifth, devaluation causes little inflation, exchange rate pass-through (ERPT) being low; sixth, the price elasticity of exports and imports fulfils the Marshall-Lerner condition; seventh, countries do successfully target their exchange rates to ensure competitiveness and thereby grow their economies and raise living standards.

2.6.1 Growth drives Productivity

Verdoorn's Law describes a simple long-run relation between productivity and output growth, such that $p = a + bQ$, where p is the labour productivity growth, Q

the output growth (value-added), *b* is the Verdoorn coefficient and *a* is the exogenous productivity growth rate.

Rather than explaining productivity growth by the progress of knowledge in science and technology, as in neoclassical models such as Solow's, Verdoorn's law assumes path-dependent cumulative causation, in which demand drives output; increased output causes increasing returns thereby augmenting the rate of accumulation.

Kaldor and Thirlwall realised that an expanding export sector facilitates specialisation in the production of export products; learning- by-doing increases the level of skills in the export sector, creating a virtuous circle of demand-led growth feeding rising productivity. This reallocates resources from the less efficient non-trade sector to the more productive export sector, and lowers the price of traded goods.

Export demand is potentially far greater than domestic demand alone, and growth in manufacturing, which we evidence later is invariably where productivity increases occur[6], is therefore essential for output growth. Increased growth is the prime cause of increasing productivity, so export demand, which requires a competitive currency, is therefore key.

The exchange rate featured in economic debate from the First World War on, as Schenk, (1994 & 2010) bears witness. Prior to the 1980s many OECD governments accepted that an overvalued currency encourages unemployment, trade deficits and slow growth. Hence in 1975, the European Community decided not to allow the Swiss Franc to join the European Snake fearing its strength would put upward pressure on Common Market currencies, thereby weakening their trade balances with the ROW, (Hudson 2005, p.p. 90 to 100.). Nevertheless, since c. 1980, UK governments have moved from fretting about the trade deficit to ignoring it, leaving exchange rates to 'the market'.

[6] 'faster growth in manufacturing will create faster growth overall' Lavoie, 2014, p.528

2.6.2 Manufacturing and productivity

We turn now to a crucial assumption of the pro-devaluation export-led growth case. This is that manufacturing has always been, and remains, the sector of the economy where productivity increases can most easily occur**.**

History shows that it is only since the industrial revolution, when technology began to replace or supplement human labour, that productivity significantly increased (Table 3).

Table 3

Table 1–3. **Level and Rate of Growth of GDP: World and Major Regions, 0–1998 A.D.**

	0	*1000*	*1820*	*1998*	*0–1000*	*1000–1820*	*1820–1998*
	(billion 1990 international dollars)				*(annual average compound growth rate)*		
Western Europe	11.1	10.2	163.7	6 961	–0.01	0.34	2.13
Western Offshoots	0.5	0.8	13.5	8 456	0.05	0.35	3.68
Japan	1.2	3.2	20.7	2 582	0.10	0.23	2.75
Total Group A	12.8	14.1	198.0	17 998	0.01	0.32	2.57
Latin America	2.2	4.6	14.1	2 942	0.07	0.14	3.05
Eastern Europe & former USSR	3.5	5.4	60.9	1 793	0.05	0.29	1.92
Asia (excluding Japan)	77.0	78.9	390.5	9 953	0.00	0.20	1.84
Africa	7.0	13.7	31.0	1 039	0.07	0.10	1.99
Total Group B	89.7	102.7	496.5	15 727	0.01	0.19	1.96
World	102.5	116.8	694.4	33 726	0.01	0.22	2.21

Source: Appendix B.
The World Economy: A Millennial Perspective by Angus Maddison (OECD, 2001), p.28

Source: (Table 1-3 in Maddison 2013 p.28)

As Angus Maddison's website notes:

> 'Over the past millennium, world population rose 22–fold. Per capita income increased 13–fold, world GDP nearly 300–fold. This contrasts sharply with the preceding millennium, when world population grew by only a sixth, and there was no advance in per capita income.' (Source: The Maddison-Project, http://www.ggdc.net/maddison/maddison-project/home.htm, 2013 version.)

The adaptability of the human mind, touted to support the contention that productivity can rise faster in services than manufacturing, also increases manufacturing productivity, as technical innovation passes through into the production process.

ONS figures show that output per worker in manufacturing is well above the average. For example, in 2012, the average number of people employed in manufacturing was 2,552k. Gross Value Added in manufacturing was £147,702bn, so average value added per employee was £57,877, whereas for the whole economy it was £42,705, (total GVA £129.9bn/total workforce of 30,416k).

Table 4, (*Source John Mills, 2016, derived from sources stated*) shows that from 1997 to 2015 manufacturing, despite declining to only 9.7% of GDP, contributed 27.9% to the increase in GVA.

Table 4 Manufacturing Productivity UK 1997-2015

Changes in Output per head of the UK Working Population between 1997 and 2015

	1997	Value Added in constant £bn	Labour Force in '000s	Value Added per Head £'000s	% GVA in 1997	% GVA in 2015	1997-2015 Change in GDP % Output
A	Agriculture	9.1	484	18,787	0.8	0.7	-0.1
B	Mining and Quarrying	66.1	70	944,500	5.8	1.9	-3.9
C	Manufacturing	160.0	4,251	37,632	13.9	9.7	-4.3
D	Electricity, Gas, etc	17.6	118	148,907	1.5	1.2	-0.3
E	Water	13.7	131	104,412	1.2	1.2	0.0
F	Construction	81.3	1,757	46,255	7.1	6.1	-1.0
G	Wholesale Retail & Motor Trade	134.3	4,628	29,023	11.7	11.6	-0.1
H	Transportation and Storage	58.4	1,265	46,169	5.1	4.4	-0.7
I	Accommodation and Food	28.6	1,646	17,395	2.5	2.7	0.2
J	Information and Comms	37.5	1,039	36,080	3.3	6.3	3.0
K	Financial & Insurance	72.9	1,112	65,544	6.4	6.9	0.5
L	Real Estate	112.7	276	408,504	9.8	11.7	1.8
M	Professional Science Tech	50.7	1,628	31,128	4.4	8.0	3.5
N	Administration & Support	34.7	1,600	21,699	3.0	5.2	2.2
O-Q	Government, Health and Edu	219.2	6,483	33,808	19.1	18.1	-1.0
R-U	Other Services	50.8	1,356	37,458	4.4	4.2	-0.2
		1,147.5	27,844	41,213	100.0	100.0	0.0

	2015	Gross Value Added in constant £bn	Labour Force in '000s	Gross Value Added per Head £'000s	Output per Head Percentage Change from 1997 to 2015: Total % Change	Output per Head Percentage Change from 1997 to 2015: Annual Average	Weighted Average % of the Economy	Growth Contri-bution %	% Growth Contri-bution %
A	Agriculture	11.7	384	30,568	62.7	2.74	0.8	0.4	2.0
B	Mining and Quarrying	30.6	76	403,211	-57.3	-2.55	3.5	-1.7	-8.5
C	Manufacturing	155.0	2,614	59,300	57.6	2.56	11.4	5.7	27.9
D	Electricity, Gas, etc	19.9	139	143,295	-3.8	-0.20	1.4	0.0	-0.2
E	Water	19.5	180	108,261	3.7	0.20	1.2	0.0	0.2
F	Construction	98.3	2,118	46,416	0.3	0.02	6.5	0.0	0.1
G	Wholesale Retail & Motor Trade	186.2	4,965	37,510	29.2	1.43	11.6	2.9	14.4
H	Transportation and Storage	70.7	1,387	50,978	10.4	0.55	4.7	0.4	2.1
I	Accommodation and Food	43.2	2,174	19,888	14.3	0.74	2.6	0.3	1.6
J	Information and Comms	101.4	1,344	75,449	109.1	4.18	5.0	4.7	23.3
K	Financial & Insurance	110.7	1,131	97,868	49.3	2.25	6.7	2.8	13.9
L	Real Estate	187.3	501	373,780	-8.5	0.46	10.9	-0.8	-3.9
M	Professional Science Tech	127.9	2,569	49,771	59.9	2.64	6.5	3.3	16.4
N	Administration & Support	83.7	2,692	31,108	43.4	2.02	4.3	1.6	7.9
O-Q	Government, Health and Edu	291.2	8,342	34,909	3.3	0.18	18.5	0.5	2.6
R-U	Other Services	68.2	1,782	38,250	2.1	0.12	4.3	0.1	0.4
		£1,605.6	32,398	49,559	20.3	1.03	100.0	20.3	100.0

Sources: ONS Tables on Employees by Standard Industrial Classification (SIC)ONS reference LPROD02. Table on Value Added by SIC from ONS table reference GDP(O) Low Level. All values are in constant prices.

What is the source of growth? The Romans straddled the UK with straight roads and Cicero wrote philosophy second to none. And Cicero's waiter brought food to the table little slower than a waiter today. Yet the latter has a TV, mobile phone and health care. Services see little direct increase in productivity but in the technology and manufacturing sector, the combination of energy, machinery and technology dramatically increases the ratio of output to inputs. In parts of the service sector where technology is employed, output increases, but increased output per head originates in manufacturing and technology. However, if we did not pay today's waiter enough to enjoy at least some of this increased output, there would be no waiters. Hence those whose productivity has not increased much over hundreds of years, benefit from the rise in productivity despite not contributing to it. This explains the data in Table 4.

It is equally vital to understand that large scale infrastructure spending has a long pay-back time and the return on capital is usually merely in-line with interest rates. It is industry, particularly light industry where the introduction of new plant and new technology can be done quickly, that brings greater and more rapid returns on investment. As per 'Kaldor-Verdoorn', it is not just the returns to individual investors that count: the speed of money circulation can rise due to the knock-on effects of higher wages and higher employment. This can bring about very large returns to the economy in aggregate. The s (the reciprocal of the ICOR) can be higher than 50%. A competitive exchange rate unlocks these potential returns.

2.6.3 The myth of rising cost curves

The anti-devaluation case is buttressed by the neoclassical concept of rising marginal costs. *If* firms faced rising marginal costs, then increasing output would be inflationary but in recessions, firms cut back production creating underutilised capacity and a consequent output gap. Firms can then expand production by utilising this unused capacity. Neoclassical economists therefore conclude that it is only in recessionary times that average costs can remain constant or fall as output increases.

In normal times, they assert, firms face rising marginal costs, so extra demand raises prices, thereby reducing any increase in price competitiveness.

With rising cost curves companies could restrain costs and increase exports only by holding their production constant and switching from domestic to export sales. To facilitate this government must dampen domestic demand to absorb the inflationary pressure. Indeed, after the 1981 UK recession the large decrease in domestic demand induced a trade surplus. While depressing domestic demand may address a trade deficit, it shrinks the economy and reduces living standards, ceteris paribus, at least in the short run.

However, empirical research predominantly by Post-Keynesian economists shows conclusively that the vast majority of firms do not face rising cost curves. Manufacturing can expand without inflationary consequences in normal non-recessionary times.

The myth of rising marginal costs is exposed by Blinder (1988) and Lavoie (2009 & 2014) who draw on the work of Downward (1995) and Eiteman &Guthrie (1952).

Downward found that 63% of businesses disagreed that costs and output increase together while 64% agreed that costs decreased as output increased, and 72.5% agreed that price competition is stronger than non-price competition.

Lavoie (Ibid,) quotes Eiteman and Guthrie's findings:

> 'Only 18 companies out of 366 picked curves that support the neoclassical theory. If we look at the costs of producing individual products, only 62 out of 1082 picked products conform with rising average costs.' They conclude, 'the replies demonstrate a clear preference of business men for curves which do not offer great support to the argument of marginal theorists' (Eiteman and Guthrie 1952: p. 838)'.[7]

Keen, S. (2013, p.126) quotes Blinder's summary of his findings, which were clearly not expected by Blinder:

> 'Firms report having very high fixed costs – roughly 40 percent of total costs on average. And many more companies state that they have falling, rather than rising, marginal cost curves. While there are reasons to wonder whether respondents interpreted these questions about costs correctly,

[7] Businesses reported their surprise to Eiteman and Guthrie at marginal economists' rising cost curves, explaining that 'the absorption of fixed expenses would more than offset the added direct expenses incurred'.

their answers paint an image of the cost structure of the typical firm that is very different from the one immortalized in textbooks.

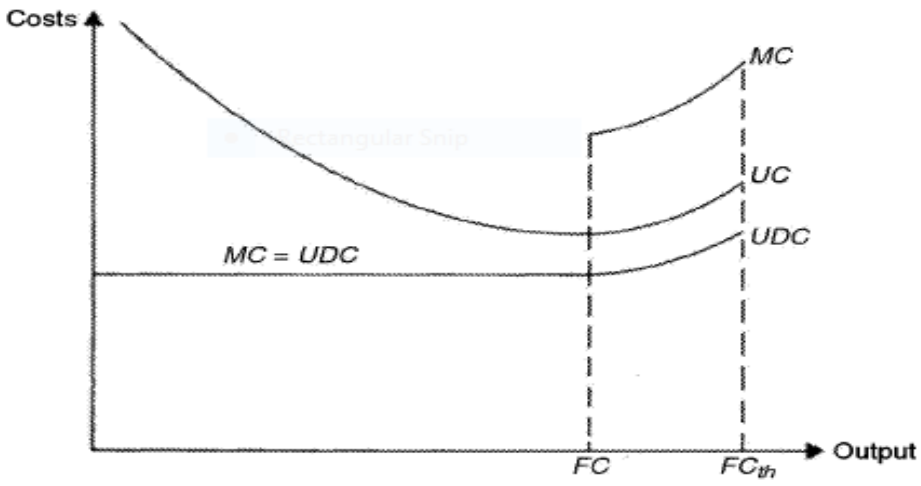
The overwhelmingly bad news here (for economic theory) is that apparently, only 11 percent of GDP is produced under conditions of rising marginal cost.'

Lavoie and Stockhammer (2013, p. 8) also argue that, since empirical research finds that 89-95% of firms have constant marginal cost curves, this leads to falling unit costs as volume increases, not increasing unit costs.

In neoclassical theory firms maximise profits by setting production at the point where marginal cost equals marginal revenue (MC=MR). Blinder (Ibid, p 43) Keen and other Post Keynesian economists argue that firms use mark-up pricing and face falling average costs as output expands. This evidence contradicts most economic text books.

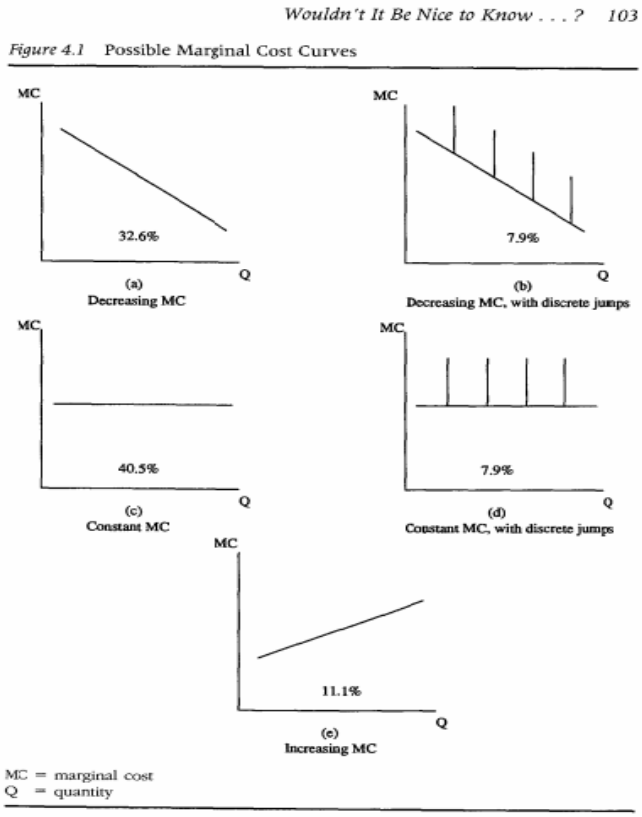
Flat or falling marginal productivity curves are wrong in theory and in practice. Figures 3A and 3B show empirical reality.

Figure 3 A Real Cost Curves



Source: (Figure 3.7 Lavoie 2014 p.150) Marginal Costs (MC), unit direct costs (UDC) and unit costs (UC) of the post-Keynesian firm. FC = full capacity FCth = theoretical full capacity.

Figure 3 B More 'Post-Keynesian Cost Curves'



Source: Figure 4.1 Blinder 1988 p. 103. Cost Curves.

2.6.4 Services versus Manufacturing

100% of manufactures are tradeable whereas many services are not. You cannot export home care, or your local restaurant (though you can sell franchises). Thirlwall and Gibson (Ibid,) found that in the 60s and 70s only 20% of services were tradable.

Barsland and Gross (2015, p.10) confirm that two thirds of global trade consist of manufactures. They find that for most countries, including the EU, only 5% of service output is traded, whereas for manufacturing the figure is c. 80%. An economy which over-concentrates on services is therefore likely to experience BOT problems.

Although over 75% of UK GDP comes from the service sector, in 2016 goods accounted for over 55% of UK exports*, (ONS, UK trade report Oct. 2017*) with manufacturing at only c. 10% of GDP accounting for 45% (*The Manufacturer. Available at: https://www.themanufacturer.com/uk-manufacturing-statistics/*). The

goods balance was a negative £135,495m. The UK's service sector surplus[8] can no longer fully offset the goods deficit, which has persisted since 1982.[9]

Returning to the 'Kaldor-Verdoorn model', Mills, (1997, 1999, 2003 and 2012), argues that a competitive currency is a prerequisite for increasing GDP per head; economic growth precedes productivity increases, not vice versa. This is in line with Myrdal (1957) who supposes a path-dependent theory of circular and cumulative causation. As per Kaldor and McCombie (1993), Mills argues this virtuous circle is driven by export growth. He supports this with empirical observation; for example, the Asian Tigers in the 80s and 90s, (and China today), had levels of productivity below the UK and the West, and yet they grow fast while the west suffers relative deindustrialisation. Economists, says Mills, confuse the level of productivity with the level of national competitiveness. The latter is determined primarily by the exchange rate ***which must be adjusted to account for whatever level of productivity an economy may have***. Productivity can increase a firm's competitiveness in relation to another firm but at the national level, if productivity drove growth, countries with higher productivity would always grow faster than their competitors. They do not, so it doesn't. It is growth that drives productivity gains; growth is facilitated by profitability which enables further investment and also by the learning by doing which occurs in growing economies.

We deduce that a competitive exchange rate enables manufacturing, exports and the whole economy to grow. There is an accounting paradox here. Manufacturers strive to replace living labour with machinery to increase competitiveness. Rising productivity raises living standards but by lowering costs it simultaneously reduces manufacturing as a proportion of GDP. Over time therefore, the manufacturing share of GDP declines and the labour share of the manufacturing cost base falls, so direct labour is often only 10% to 15% of costs. The reduction in manufacturing's share of GDP is, paradoxically, proof that it is the source of rising living standards.

[8] In 2016 the service sector surplus of £94661 still left an overall trade deficit of £40834.

[9] Jobs in the service sector tend to be low paid, except for some in the financial sector. Many jobs in light industrial manufacturing in the UK are also low paid, because with an overvalued exchange rate some firms in this sector only survive by depressing wages.

2.6.5 Devaluation, Inflation and the Balance of Payments

We now test the theory that devaluation can equilibrate the UK BOT, reduce the BPC and increase living standards, against empirical evidence.

The UK's 31% devaluation in 1931 successfully ended deflation with consumer price falls easing from -6% to 0% within two years (Table 5). There followed the highest level of job creation and economic growth the UK has ever achieved (4.4% p.a. for four years); growth only stalled when sterling appreciated in 1936.

Table 5 The UK's Most Successful Devaluation

	Year	Cons-umer Prices	Wage Rates	Real Wage Change	GDP Change	Industrial Output Change	Unemployment Per Cent
Britain – 31% Devaluation against the dollar and 24% against all currencies in 1931	1930	-6.0	-0.7	5.3	-0.7	-1.4	11.2
	1931	-5.7	-2.1	3.6	-5.1	-3.6	15.1
	1932	-3.3	-1.7	1.6	0.8	0.3	15.6
	1933	0.0	-0.1	-0.1	2.9	4.0	14.1
	1934	0.0	1.5	1.5	6.6	5.5	11.9

Source: (Table 3.1 in Mills 2012 p.43)

Ironically, Thirlwall and Gibson (Ibid,) cite four studies proving the UK's 1967 devaluation had a positive effect on the BOP (Appendix 4).

Cairncross and Eichengreen (1983), analyse how exports and imports reacted to the three sterling devaluations of 1931, 1949 and 1967. Their conclusion is qualified support for devaluation.

Their analysis of the 1949 devaluation in particular, (Ibid, pp. 151-155.), shows it was not rendered ineffectual by inflation and improved the current account. Interestingly, services improved more than manufactures.

Table 6 shows that in 1949 real wages rose after devaluation; retail prices rose by a mere 2.9% and fell by .1% to a net change of 2.8% by 1950, when the Korean War started. The latter shock explains the 9.7% blip the following year. Aggregating the price rises over the three years, we arrive at c. 15% inflation, which is half the nominal devaluation. Following the 1967 devaluation inflation fell from 4% in 1966 to 2.5% in 1967, before picking up to 4.7% and 5.4% in the two following years. Real wages grew after the 1967 devaluation.

Table 6

UK Devaluations: RPI, Wage Rate and Real Wage Rate Changes

1949 – 30% Devaluation against US Dollar	RPI per cent change	Wage Rate per cent change	Real Wage Rate – change from previous year
1949	+2.9%	+3.6%	+0.7%
1950*	+2.8%	+4.2%	+1.4%
1951	+9.7%	+10.7%	+0.9%
1967 – 14% Devaluation against US Dollar			
1966	+4.0%	+6.4%	+2.3%
1967	+2.5%	+3.3%	+0.8%
1968	+4.7%	+8.1%	+3.2%
1969	+5.4%	+7.7%	+2.2%
1972/73 – 16% Devaluation			
1971	+7.9%	+11/3%	+3.2%
1972	+6.8%	+12.4%	+5.2%
1973	+8.4%	+13.9%	+5.1%
1974	+15.9%	+17.5%	+1.4%

Source: extracted from Table 6.1 in Mills 1997 p.133.

Official statistics reveal that some devaluations are not followed by commensurate inflation, while after others inflation ***falls***. Observation reveals that economic growth invariably improves after devaluations. Table 7 shows inflation falling after Finland's 24% devaluation. Even after Argentina's 72% devaluation, the CPI fell back quickly from 25.9% to 4.4%, before rising to c. 10%, with economic growth transformed from a negative 10.9% to a positive 9%. During the 34% Korean devaluation between 1982 and 1986, economic growth continued, inflation **fell** from 21.3 to 2.8%, before picking up a little, and ***real wages grew by 43%*** (NBER).

Table 7 Consumer Price Inflation & Growth

Devaluations against all currencies									
Argentina 72% early 2002	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
Inflation		-0.9	-1.1	25.9	13.4	4.4	9.6	10.9	
Growth	-3.4	-0.8	-4.4	-10.9	8.8	9.0	8.9	8.0	9.0
Finland 24% 91/93	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**
Inflation	6.6	6.1	4.1	2.6	2.1	1.1	1.0	0.6	
Growth	5.1	0.7	-5.9	-3.3	-0.7	3.9	4.2	3.7	6.3
Iceland 50% 07/09	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Inflation	4.0	6.7	5.1	12.7	12.0	5.4	4.0	5.2	3.9
Growth	6.7	5.0	9.4	1.5	-6.9	-3.6	2.0	1.2	4.4
Korea 34% 1982-86	**1981**	**1982**	**1983**	**1984**	**1985**	**1986**	**1987**	**1988**	**1989**
Inflation	21.3	7.2	3.4	2.3	2.5	2.8	3.1	7.2	5.7
Growth	7.2	8.3	13.2	10.4	7.8	11.2	12.5	11.9	7.0

Source: International Monetary Fund, international financial statistics and data files
Created from: World Development Indicators, Series: Inflation, consumer prices (annual %)

Available at: https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG?locations=K (*Accessed 08th October 2017,* https://goo.gl/4PxrxX

Table 8 shows that the 10% Japanese devaluation of 2012, designed to kick start the economy and end deflation, ***just*** managed to turn inflation positive, while in Spain, after an 18% devaluation from 1992-94, inflation ***fell*** and growth turned positive. In the US despite an inflationary blip, the long-term trend from 1982 to 1992 shows inflation in decline

Table 8 Japan, Spain, USA: Devaluations

Japan 10% 2012	2008	2009	2010	2011	2012	2013	2014	2015	2016	
Inflation			-0.7	-0.3	-0.1	0.3	2.8	0.8	-0.1	
Growth	-1.1	-5.4	4.2	-0.1	1.5	2.0	0.3	1.2	1.0	
Growth per capita US$	39339.3	40085.2	44507.7	48168.0	48603.5	40454.4	38096.2	34474.1	38894.5	
Spain 18% 92/94	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**
Inflation	6.7	5.9	5.9	4.6	4.7	4.7	3.6	2.0	1.8	
Growth	3.8	2.5	0.9	-1.0	2.4	2.8	2.7	3.7	4.3	4.5
USA 28% 1985/87	**1983**	**1984**	**1985**	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**
Inflation	3.2	4.3	3.6	1.9	3.7	4.0	4.8	5.4	4.2	3.0
Growth	4.6	7.3	4.2	3.5	3.5	4.2	3.7	1.9	-0.1	3.6
Growth per capita US$	15,561.4	17,134.3	18,269.4	19,115.1	20,100.9	21,483.2	22,922.4	23,954.5	24,405.2	25,493.0

Source: World Bank Open Data: Inflation, consumer prices (annual %),/Available at: https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG; and GDP Growth (annual), Available at: https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG and GDP per capital growth (annual %), Available at: https://data.worldbank.org/indicator/NY.GDP.PCAP.KD.ZG

After the infamous 'Black Wednesday' devaluation in 1992, UK inflation fell and growth increased (Table 9). This took place in a disinflationary macro environment and Ken Clarke's taxation policy was fairly tight. This may have born down on inflation after the devaluation.

Table 9 'Black/White' Wednesday

UK 19% 1992	1990	1991	1992	1993	1994	1995	1996	1997
Inflation	7.0	7.5	4.3	2.5	2.0	2.7	2.5	1.8
Growth	0.7	-1.1	0.4	2.5	3.9	2.5	2.5	3.1
Per Capita Growth US$	19,095.5	19,900.7	20,487.2	18,389.0	19,709.2	22,755.6	23,948.0	26,357.5

Created from: World Development Indicators Series: Inflation, consumer prices (annual %) Source: World Bank.

Source: World Bank Open Data: Inflation, consumer prices (annual %) Available at: https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG; and GDP Growth (annual). Available at: https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG and GDP per capital growth (annual %) Available at: https://data.worldbank.org/indicator/NY.GDP.PCAP.KD.ZG

Table 10 shows ***inflation falling*** after devaluations in the deflationary environment of the early 1990s, with the ***real wage rising*** in Finland and the UK.

Table 10 Falling Inflation after Devaluation

	Year	Consumer Prices	Wage Rates	Real Wage Change	GDP Change	Industrial Output Change	Unemployment Per Cent
Italy – 20% Devaluation against all currencies over 1990-93	1990	6.4	7.3	0.9	2.1	-0.6	9.1
	1991	6.3	9.8	3.5	1.3	-2.2	8.6
	1992	5.2	5.4	0.2	0.9	-0.6	9.0
	1993	4.5	3.8	-0.7	-1.2	-2.9	10.3
	1994	4.0	3.5	-0.5	2.2	5.6	11.4
	1995	5.4	3.1	-2.3	2.9	5.4	11.9
Finland – 24% Devaluation against all currencies over 1991/93	1990	6.1	9.4	3.3	0.0	-0.1	3.5
	1991	4.1	6.4	2.3	-7.1	-9.7	7.6
	1992	2.6	3.8	1.2	-3.6	2.2	13.0
	1993	2.1	3.7	1.6	-1.6	5.5	17.5
	1994	1.1	7.4	6.3	4.5	10.5	17.4
	1995	1.0	4.7	3.7	5.1	7.8	16.2
Spain – 18% Devaluation against all currencies over 1992-94	1991	5.9	8.2	2.3	2.3	-0.7	16.3
	1992	5.9	7.7	1.8	0.7	-3.2	18.5
	1993	4.6	6.8	2.2	-1.2	-4.4	22.8
	1994	4.7	4.5	-0.2	2.1	7.5	24.1
	1995	4.7	4.8	0.1	2.8	4.7	22.9
	1996	3.6	4.8	1.2	2.2	-0.7	22.2
Britain 19% Devaluation against all currencies in 1992	1990	9.5	9.7	0.2	0.6	-0.4	6.8
	1991	5.9	7.8	1.9	-1.5	-3.3	8.4
	1992	3.7	11.3	7.6	0.1	0.3	9.7
	1993	1.6	3.2	1.6	2.3	2.2	10.3
	1994	2.4	3.6	1.2	4.4	5.4	9.6
	1995	3.5	3.1	-0.4	2.8	1.7	8.6

Source: Table 3.1 Mills, 2012, pp. 43 & 44

Table 11 shows inflation quickly abated after the Argentinian 72% devaluation in 2002. The 50% Icelandic devaluation (2007/09) was followed by only a 6% rise in inflation which quickly fell back to pre-devaluation levels.

Table 11 Deep Devaluations

Argentina – 72% Devaluation against all currencies early 2002	Year	Consumer Prices					
	2000	.9					
	2001	-1.1					
	2002	25.9					
	2003	13.4					
	2004	4.4					
	2005	9.6					
	2006	10.9					
Iceland – 50% Devaluation against all currencies	Year	Consumer Prices	Wage Rates	Real Wage Rates	GDP Change	Industrial Output Change	Unemployment Per Cent
	2005	4.0	7.2	3.2	7.5	4.6	2.6
	2006	6.7	9.8	3.1	4.3	8.4	2.9
	2007	5.1	8.6	3.5	5.6	5.2	2.3
	2008	12.7	8.3	-4.4	1.3	7.0	3.0
	2009	12.0	3.6	-8.4	-6.3	-5.9	7.2
	2010	7.1	4.7	-2.4	-4.2		7.6
	2011	4.0					

Source: Table 3.1 Mills, 2012, pp. 43 & 44

Table 12 shows inflation barely moved after the UK's devaluation after the GFC.

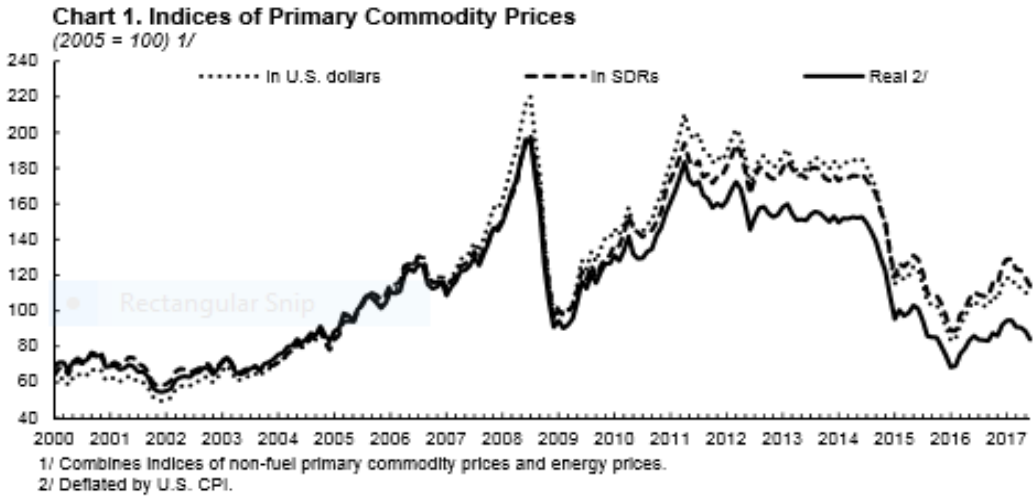
Following the post Brexit devaluation of 15% against the Euro and 18% against the dollar, the UK CPI rose but in part this was due to the 2014/15 fall in commodity prices reversing in 2016, (Figure 4). The ONS (https://www.ons.gov.uk/economy/inflationandpriceindices/bulletins/consumerpriceinflation/november2017) expects that the CPI, having risen to 3.1% in December 2017, has peaked. It notes that airfares and computer games were contributing factors. However, 2017's inflation was also caused by ***other*** factors unrelated to devaluation, including poor harvests and Europe wide cream shortages, as chronicled by Davies, P. (2017, pp.18:23). The CPIH, which includes owner occupiers' housing costs, was lower at only 2.8%.

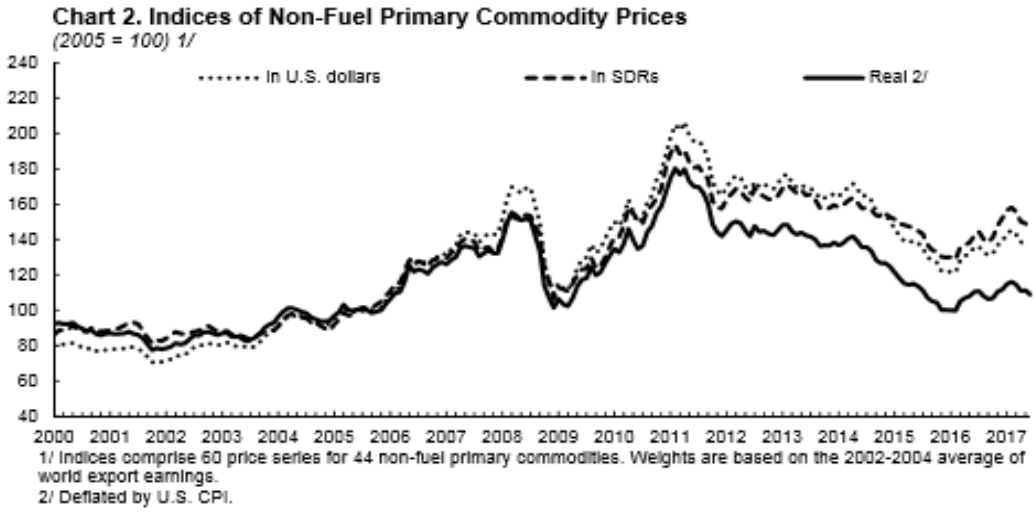
Table 12 UK Post GFC Devaluation

UK	2006	2007	2008	2009	2010	2011	2012	2013
Inflation	2.3	2.3	3.6	2.2	3.3	4.5	2.8	2.6
Growth	2.5	2.6	-0.6	-4.3	1.9	1.5	1.3	1.9

Created from: World Development Indicators Series: Inflation, consumer prices (annual %) etc, World Bank as per Tables 7 and 8

Figure 4 Rising Commodity Prices in 2016



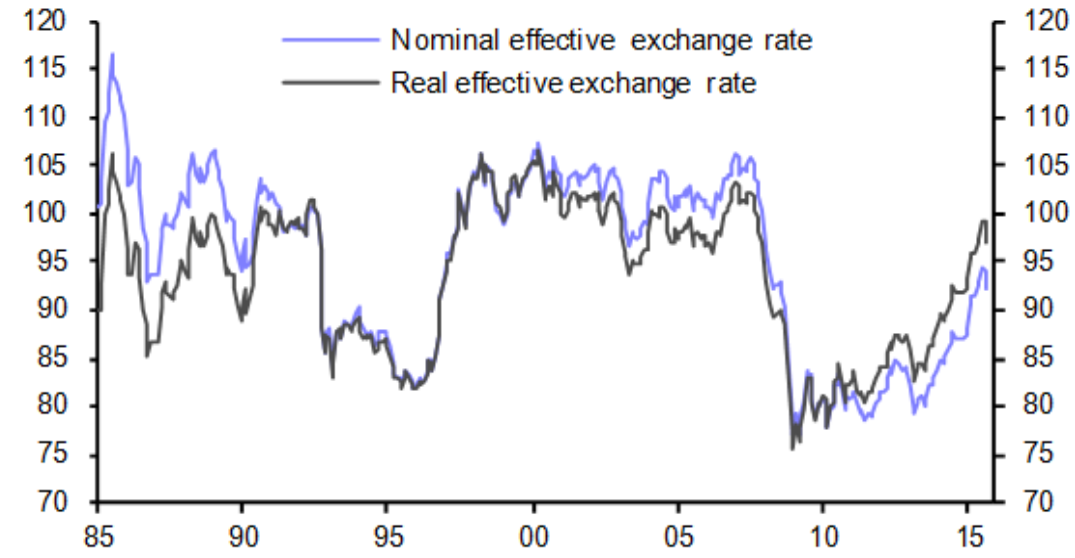


Source: IMF available at: http://www.imf.org/external/np/res/commod/Charts.pdf (Accessed 30th November 2017)

These results are not confined to advanced economies. Kashif (2013, p.7) referring to Pakistan, notes that 'Stability of the nominal exchange rate may be desirable for many reasons, but not because of fears that exchange rate fluctuations will impose an inflationary cost on the economy.'

As devaluation need not cause inflation it is no surprise that nominal and real exchange rates can move in tandem, as occurred in the UK between 1985 and 2015:

Figure 5 UK Real and Nominal Effective Exchange Rates 1985-2016



Source: Figure 7 in Bootle & Mills 2016, p.62

Rodrik (2007, p.16) confirms this: 'One of the key findings of macro literature is that nominal exchange rates and real exchange rates move quite closely together. Levy-Yetati and Struzeneggger (2007) have recently shown that sterilised intervention[10] can and does affect the real exchange rate in the short to medium-term'. Hence inflation need not offset nominal devaluations.

2.6.6 The UK and the Marshall-Lerner Condition

Numerous studies have shown that the UK meets the Marshall-Lerner condition. Table 13, shows elasticities summing to 1.51, and Table 14 shows an optimistic 3.05.

[10] Governments stabilise the money supply by buying securities to put money in, or selling securities to take money out, of the economy.

Table 13 Price Elasticities - UK Meets Marshall-Lerner Condition

Industrial Countries	Elasticity of Demand Exports	Elasticity of demand Imports	SUM
Austria	1.02	1.23	2.25
Belgium	1.12	1.27	2.39
Canada	0.68	1.28	1.96
Denmark	1.04	0.91	1.95
France	1.28	0.93	2.21
Germany	1.02	0.79	1.81
Iceland	0.83	0.87	1.70
Italy	1.26	0.78	2.04
Japan	1.40	0.95	2.35
Korea	2.50	0.80	3.30
Netherlands	1.46	0.74	2.20
Norway	0.92	1.19	2.11
Sweden	1.58	0.88	2.46
Switzerland	1.03	1.13	2.16
United Kingdom	**0.86**	**0.65**	**1.51**
United States	1.19	1.24	2.43
Average	1.11	0.99	2.10

Notes: The estimates above refer to elasticities over a two to three-year period. The figures are based upon the result of a number of different studies. Individual studies give differing estimates depending on the time periods involved, the econometric methodology employed and the particular data sets used.

. Source: *Does Exchange Rate Policy Matter?* European Economic Review vol 30 (1987), p 377, reproduced on page 63 of International Finance by Keith Pilbeam, Basingstoke, Macmillan UK 1994

Source: Abbreviated from Table 11.1 in Mills 2012 0. 215

Table 14 IMF 2010 – UK versus German Price Elasticities

Price Elasticities IMF 2010 Elasticity of Demand for Exports and Imports and Imports 2001-2004

Estimates produced by the IMF and published in 2010

	Export	Import	
	Long Run	Long Run	Sum
Germany	2.51	0.10	2.61
United Kingdom	**1.37**	**1.68**	**3.05**

Sources: Export Supply Elasticities Table 2, page 21, and Import Demand Elasticities Table 1, page 15 in *A Method for Calculating Export Supply and Import Demand Elasticities* by Stephen Tokarick. Washington DC: IMF Working Paper WP/10/180, published 2010. NB Signs have been reversed for Imports in the table above for the sake of clarity.

However, Table 15 shows price elasticities of 0.6 for UK imports, and 1.6 for exports, with Crane et al's own calculations of .38 and 1.31 ***not summing to unity***. Ashcroft correctly observes that in recent decades price elasticity estimates have often been too low for devaluation to succeed. Indeed, as BIS (2010) also shows, JP Morgan found that sterling's near 25% decline since mid-2007 had only a small impact on trade performance. Although exports rose, imports also rose, by a similar percentage starting from a higher base.

Table 15 Long-run Elasticities of industrialised countries through 1994

TABLE 2

Long-run elasticities of industrialized countries through 1994

A. Estimates

	Income				Price			
	Hooper, Johnson, and Marquez's estimates		Authors' estimates		Hooper, Johnson, and Marquez's estimates		Authors' estimates	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
Canada	1.1*	1.4*	1.56*	1.50*	–0.9*	–0.9*	–0.61*	–1.14*
France	1.5*	1.6*	—	1.30*	–0.2	–0.4*	—	–0.50*
Germany	1.4*	1.5*	2.06*	2.26*	–0.3	–0.06*	–0.79*	–0.42*
Italy	1.6*	1.4*	1.64*	1.63*	–0.9*	–0.4*	–0.57*	–0.33*
Japan	1.1*	0.9*	0.99*	1.65*	–1.0*	–0.3*	–0.74*	–0.15*
UK	1.1*	2.2*	0.97*	1.70*	–1.6*	–0.6	–1.31*	–0.38*
U.S.	0.8*	1.8*	2.33*	1.92*	–1.5*	–0.3*	–0.24*	–0.25*
U.S., annual	—	—	1.06*	1.78*	—	—	–0.97*	–0.19*

B. Lags and sample periods

	Number of lags				Sample period start dates			
	Hooper, Johnson, and Marquez's estimates		Authors' estimates		Hooper, Johnson, and Marquez's estimates		Authors' estimates	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
Canada	9	8	4	2	1976:Q1	1961:Q1	1981:Q1	1961:Q1
France	2	3	—	5	1975:Q4	1971:Q3	—	1978:Q1
Germany	2	2	3	3	1977:Q4	1968:Q1	1981:Q1	1979:Q4
Italy	2	4	3	5	1976:Q1	1971:Q2	1981:Q1	1981:Q1
Japan	5	6	3	8	1976:Q1	1955:Q2	1981:Q1	1980:Q1
UK	4	5	6	4	1976:Q1	1955:Q1	1981:Q1	1955:Q1
U.S.	2	9	3	4	1976:Q1	1959:Q3	1981:Q1	1955:Q1
U.S., annual	—	—	3	3	—	—	1981	1955

*Significant at the 5 percent level.
Note: All sample periods end in 1994:Q4.
Sources: Authors' calculations; Haver Analytics; and Hooper, Johnson, and Marquez (2000).

Source: Table 2 in Crane et al. 2007 p.6

Nevertheless, The European Commission, (Ibid, 2010) while estimating that over 60 per cent of cross-country differences in market share changes were influenced by non-price competitiveness, conceded that price competitiveness, measured as the real effective exchange rate, could account for c. 36% of the difference in the change in export market shares across euro area members.

Gagnon, (2017) on the other hand, confidently asserts:

> 'The Marshall-Lerner condition is that the price elasticity of demand for tradables should be sufficiently high that a real depreciation leads to an increase in the trade balance. Nearly all econometric estimates of trade elasticities satisfy this condition, at least in the long run.'

This conflicting evidence concerning elasticities is resolved in Chapter 3.4.

2.6.7 Governments do influence exchange rates

Multinational firms are not concerned where their profits are made. They are, for example, 'reluctant to propose anti-dumping lawsuits against China as they have Chinese manufacturing facilities of their own', McKinnon & Schnabl (2014). Indeed, 80% of Chinese manufacturing exports are from factories that are wholly or part foreign owned (Ibid,2014).

As advantaged economic agents never conspire in their own demise, government is the only agent that can intervene on behalf of the nation state.

The argument that governments cannot control currency values is usually evidenced by failures when governments try to support ***overvalued*** currencies, with only a finite ability to purchase their own currency. Currency purchase and high interest rates cannot continue indefinitely.

Failure ***may*** also occur when countries with large trade ***surpluses*** attempt to ***suppress*** their currency. Countries with capital controls, such as China, can succeed for decades but countries fully integrated in financial markets, may not. Switzerland runs a large current account surplus and, when it capped the franc, accumulated excessive foreign exchange, so its policy of selling francs finally had to be abandoned in 2015. The UK's position is different. It has a persistent deficit.

Current international rules may stipulate that Governments should not fix exchange rates, but as Rodrik (2007, p.16) asserts 'with the exception of a handful of advanced countries, most governments pursue a variety of policies with the explicit goal of affecting the real exchange rate.' McKinnon and Schnabl (2014) confirm this: 'because other countries choose to peg, or at least smooth their exchange rates against the dollar the United States does not have any direct exchange policy of its own'. Korea exemplifies an economy that has been run with an exchange rate policy, as Nam and Kim (1999, p.262) make clear:

> 'In macroeconomic management, Korea always has a target for the current account that is considered as serious as that of economic growth or inflation, particularly when it is in deficit. As preceding analyses indicated, the Korean authorities have heavily utilized the exchange rate for the purpose of correcting large imbalances in the current account'.

For countries such as Korea it is taken as a given that:

> *'If, for example, the currency is not fully depreciated to reflect domestic inflation over that of the world for tradables, the country would face an unsustainable backslide in export competitiveness and a deterioration of the trade balance.' Nam, S-W. and Kim, S-J 1999 p.241.*

Table 16 shows some large Asian devaluations contrasting with the UK's great appreciation. Korea and Malaysia responded to capital outflows and consequent devaluation by maintaining competitive currencies, and thereby accumulating foreign reserves to protect themselves from a recurrence.

Table 16 Asian Devaluations

UK 1977-1982 REER	Up 60%
China: mid 1980s to mid1990s	Down 75%
Korean won 1996 -1998	Down 42% against $US
Malaysian Ringgit 1996 -1998	Down 36% against $US
Japanese Yen 2012- 2013	Down 34%

Source: extracted from Mills 2012, drawing on IFS IMF official statistics.

Countries aware of the influence of capital flows have stricter policies on asset acquisition. Hence China is advised to 'maintain tight capital controls to avoid further hot money flows that threaten exchange rate appreciation … and further

upward pressure on property prices', McKinnon and Schnabl (2014). The UK lacks such understanding. Chapter 6 will explain how the UK can 'control sterling'.

Economists who argue that sterling should float freely are deluded: an exchange rate is a two-sided coin. If China is suppressing its currency, it is propping up sterling. The UK ***is*** allowing its currency's value to be determined by governments, but not by the UK government.

3. Further Evaluation of the Arguments

3.1 The Ossification argument

The ossification argument implies that the hollowing out of UK industry that occurred after the 1979 sterling appreciation, created a 'leaner fitter' economy. Businesses such as John Mill's Farlane found they were no longer profitable because Chinese imports of similar products sold at retail for less than the UK cost price. The ossification implication is that these Chinese imports were obsolete, low value-added products, which should necessarily be produced using 'cheap labour' in the emerging economies. Yet clearly these cheap products are not obsolete or ossified: they are in strong demand as the composition of western trade deficits shows; China provides c. 10% of UK imports, second only to Germany (Table 17).

Table 17 UK's Top Sources of Imports + Japan and Korea

	UK Goods Imports in £m					
		1999	2000	2014	2015	% of total
1	Belgium	9,852	10,566	20,982	20,936	5.09
2	China	3,587	4,950	36,885	37,968	9.24
3	France	18,514	18,815	25,165	24,412	5.94
4	Germany	26,995	28,731	60,561	61,789	15.03
5	Italy	9,433	9,606	16,508	16,006	3.89
6	Ireland	8,760	10,354	11,855	12,803	3.11
7	Netherlands	13,850	15,526	33,017	31,690	7.71
8	Norway	3,648	5,717	18,527	13,263	3.23
9	Spain	5,994	6,194	13,754	14,079	3.43
10	Switzerland	5,491	5,588	7,790	8,470	2.06
11	United States	24,287	28,414	28,099	34,715	8.45
	Japan	8,985	10,103	7,242	6,915	1.68
	South Korea	2,749	3,373	3,186	4,458	1.08
	Total Goods Imports				**411,024**	
	Total Service Imports				**137,677**	
	Total imports 2015				**548,700**	

Source: ONS, trade balance, Annual UK Trade, Exports and Imports by country, 1999 -2015 Queries to: UK Trade team via trade@ons.gov.uk column 5 author's calculations.

Revealingly, the ossification argument acknowledges that exports ***are*** price elastic.

3.2. Relative Unit Labour Costs (RULCs) and Leading Sector Inflation

Do the positive correlations between ULCs and trade surpluses indict the pro-devaluation case?

Neoclassical theory assumes that average ULCs and average price indexes can be used to assess the competitiveness of an economy. We hypothesise that the UK BOT ***is*** related to the prices of its traded goods but that trade surplus countries may indeed have appreciating currencies and high ULCs. This 'Kaldor paradox' is solved by distinguishing between the average ULCs across an economy, and the ULCs of those goods that are being internationally traded. This is integral to the concept of Leading Sector Inflation.

In 1963, Balassa and Samuelson noted the higher inflation rates of fast growing economies. They realised the rising wages in the tradable goods sector of an emerging economy pulled up wages in the non-tradable sector. This causes inflation to be higher in faster growing economies. But, provided wages increase at a ***slower rate than productivity***, fast growing countries produce more than they can consume and achieve current account surpluses, as long as their exports are competitively priced.

Focussing on the competitiveness of the goods being traded resolves the paradox. If Germany, for example, produces complex goods that face limited competition, these goods can be expensive and have high ULCs relative to other goods. However, if no other country can produce goods of similar perceived quality more cheaply, then these 'leading sector' goods are competitively priced and drive up exports.

Leading sector inflation channels resources into the competitive tradable goods sector and pulls up the prices and costs of non-traded goods, thereby raising ULCs across the economy. Hence surplus countries can have rising average RULCs while deficit countries can have stable or falling RULCs.

The leading sector varies from country to country. The Pacific Rim countries did not start their export-led growth with high-tech complex products. They had less capital, and less advanced capital, and exported less complex goods widely available from other countries. It was the relative prices of these goods that determined the BOT. Witness the arrival in the UK of Hyundai cars in the 1980s. They had obsolete technology but were cheap and were one of Korea's leading sector goods.

An uncompetitive economy with low labour costs and poor capital may have ULCs which are too high to compete with another economy which has smarter capital and a greater capital to labour ratio. As shown in Chapter 4, with overvaluation, the profits required to fund capital deepening and technological innovation are not there. Industry falls into relative decline, unemployment rises, and labour becomes cheaper. Furthermore, if the lack of capital investment is prolonged it can induce a capacity constraint so firms trying to expand may well face ***rising*** average costs.

Table 18 shows the divergence between general prices and ***export*** prices. Price trends in the consumer sector and export sector diverge and these price differentials vary between countries. The UK's manufactured export prices were rising relative to wholesale prices and slightly less than the consumer prices which were less affected by the traded goods sector. While the USA, a country also with a BOT problem, shows trends not dissimilar to the UK, competitor countries such as Germany, France, Italy and Japan boast ***relatively lower export prices***.

Table 18 Export Prices of Manufactures Diverge from Wholesale and Consumer Prices

Increase to consumer and export prices as a percentage of wholesale prices:

	UK	USA	Germany	Japan	France	Italy	Belgium	Holland
A Consumer	119	103	130	242	121	116	158	173
B Wholesale	100	100	100	100	100	100	100	100
C Man. Exports	115	116	78	62	97	67	73	66
Increase in (C)								
1978	100	82	89	62	76	58	66	72
1980 1st qtr.	100	73	68	45	67	52	58	61

Source: Chain-linked to 1978 based on 1958, 1963, and 1970 UN series. OECD, Economic Outlook, no. 27. For the last line.

Source Table 3.1 in Gould et al. 1981 p.72

The Japanese 'economic miracle' exemplified leading sector inflation and the divergence between export prices and general prices, Japan's domestic price inflation being higher than that of its competitors, (Table 19). With the low unemployment of a fast-growing economy, firms in less productive sectors are obliged to raise wages but unit labour costs ***in the tradable goods sector, the 'leading sector',*** remain internationally competitive.

Table 19

Unemployment and Inflation Rate Percentages 1963-1993

	1963-73		*1974-79*		*1980-89*		*1990-93*	
	Unemployment Rate %	Inflation Rate %	Unemploy-ment Rate %	Inflation Rate %	Unemploy-Ment Rate %	Inflation Rate %	Unemploy-ment Rate %	Inflation Rate %
USA	4.8	3.2	6.7	8.5	7.2	5.5	6.5	3.9
UK	1.9	**5.1**	4.2	**15.6**	9.5	**7.4**	8.3	**5.1**
Japan	1.3	**6.2**	1.9	**9.9**	2..5	**2.5**	2.2	**2.5**
Germany	0.8	3.4	3.4	4.7	6.8	2.9	7.3	3.6
France	2.0	4.6	4.5	10.7	9.0	7.3	10.0	2.8
Italy	5.3	3.9	6.6	16.7	9.9	11.2	11.0	5.5

Source: OECD Historical Statistics Paris, OECD, 1995

From this we conclude that the trade balance is as significant or better an indicator of economic health than the level of domestic inflation.

The UK had falling unit labour costs in the 1960s but unit labour costs for traded exports and potential exports were uncompetitive. We revisit UK labour costs in Chapter 4.3.

The anti-devaluation case is often allied with the argument that recalcitrant labour causes wage push inflation, which raises ULCs and makes an economy uncompetitive. The UK car industry was an iconic example; its perpetual crisis was attributed to over-powerful unions, unearned wage rises, and occasionally to poor management.

However, studies confirmed UK car industry wages rose more slowly than in other industries and more slowly than in competitor nations. Low labour costs were backed by poor capital and poor management. We propose a plausible reverse chain of causation: worker bellicosity was the ***result*** of poor wages caused by an uncompetitive currency which reduces profitability necessary for capital investment and reasonable wages.

Another commonly held belief is that Italian post-war inflation was caused by devaluation. However, Italian inflation peaked, as Petrini notes (Petrini, F. 1985), when Italy had fixed exchange rates in the early 60s, and rose again in the late 60s when the lire was ***revalued*** against the dollar. It was the struggle between capital and labour to attain a higher share of GDP that led to inflation, and

devaluation was the result.[11] In this way, as John Eatwell pointed out in a debate at the Judge Business School, in Cambridge in 2015, Italy used devaluation to sustain economic growth and a growing manufacturing base despite high levels of inflation.

3.3 Monetarism, Currency Appreciation and Capacity Constraint

Many supply-siders assert that the monetarist induced UK economic shake-out of 1979 to 1981 healed 'the sick man of Europe'.

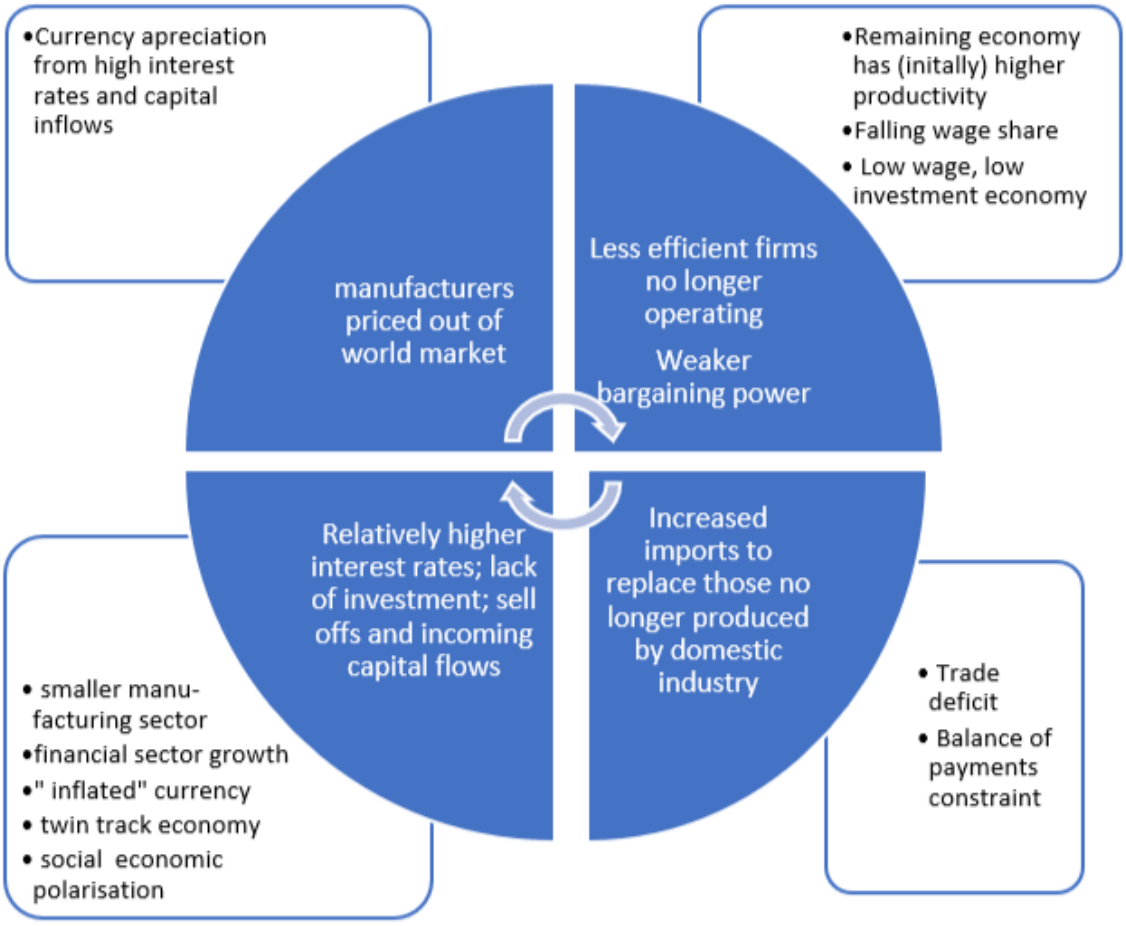
Ashcroft cites Oulten, 1990, who found 'there had been an improvement in productivity compared to the 1970s but not compared to earlier periods.' He attributes plant closures and rising productivity to the shock of the 80-81 recession and a decline in unionisation. The latter implies competitiveness was improved by labour agreeing to lower wages and smarter working practices. Logically there must be truth in this argument. However, an analogy illustrates the real effect that the 1979 to 1981 60% rise in the REER had on the UK economy.

Charged with growing taller trees in his forest, a woodsman selects all but the tallest trees and hacks them down. Statistics then show that the average height of the trees has risen dramatically; but the forest has shrunk. Figure 6 illustrates the consequences of the currency appreciation, starting from the top left box with causation running clockwise.

[11] For a thorough analysis of the Italian experience read Petrini, F. 1985.

Figure 6 Vicious Spiral[12] - Consequences of Overvaluation

Flow chart showing in clockwise direction the whole process.



Cheaper labour may increase short-run profitability but it reduces the need to invest in labour saving technology. Conversely, as present-day France demonstrates, high labour costs induce increased capital investment which leads to greater efficiency and lower unit labour costs. With an uncompetitive currency, one can have cheap labour and lower unemployment, or higher wages, a higher capital to labour ratio (lower ICOR) but higher unemployment.

Below we return to Ashcroft's supply-side hypothesis.

[12] Virtuous and vicious ***spirals*** do not return to the same starting point, as implied by circles. Economies do not return to pre-set states, but arrive at new path dependent states.

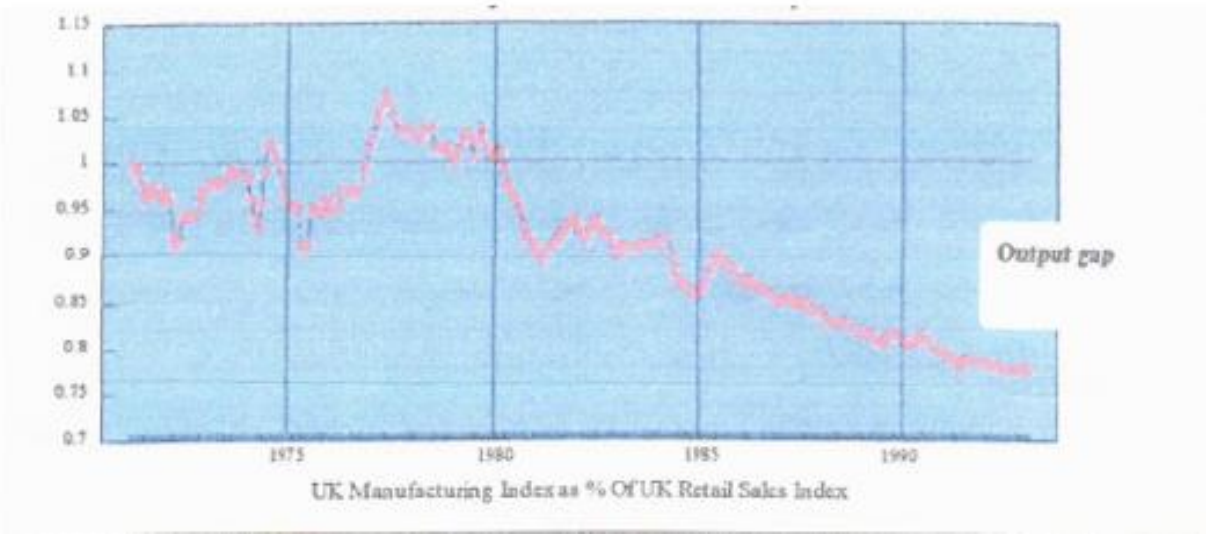
3.3.2 Lack of capacity and low productivity

Neoclassical authors see the increased productivity of the 1980s vis a vis the 70s, as vindicating Thatcher's supply-side approach. Ashcroft (Ibid, p. 207) cites Walters (1996) and Minford (1991) who saw fantastic supply-side improvement but Darby and Wren Lewis (1989), like Oulten, found that trend manufacturing productivity in the 1980s of 2.75%, while above the late seventies, was no higher than in the early seventies.

Ashcroft notes (Ibid, p 386) that the 'consumer manufacturing sector may have been in deficit as early as 1978'.

Figure 7 (Ibid, p213) illustrates this.

Figure 7 UK manufacturing and Retail Sales Indices Compared



Source: Graph 2 Chapter 7, Ashcroft 1996, p.213

Ashcroft concludes:

> 'The reduction in output capacity will assist in the deterioration of the balance of payments current account by inhibiting the supply-side potential to meet domestic or export growth. … We are able to observe that manufacturing production at the start of the 1980s suffered from a set-back from which it was not able to recover.'

He goes on to assert (Ibid, p. 212):

> 'A manufacturing base that had been struggling to maintain output in line with retail sales growth in the 1970s (average 98%) finally was unable to

> maintain the momentum. The comparative deficiency against retail sales volume, what we shall call the domestic manufacturing/consumption output gap was 20% by the end of the decade.'

Thus, Ashcroft admits that the 1979-81 cull following the 60% appreciation of sterling, permanently damaged an already structurally weak economy.

Thirlwall and Gibson attributed the sterling appreciation to the high interest rates of monetarist prescription and North Sea Oil; (Ashcroft finds the latter played a smaller role (Appendix 5)). They noted (Ibid, p.252) a 38% fall in manufacturing investment. We conclude that the overactive coppicing of our supply-side woodsman did not result in enough new trees sprouting up to replenish the forest.

Ashcroft has thus tacitly admitted a currency can be overvalued. He states there might be a level of sterling that would cure the trade deficit but insists it would involve an unacceptably large rise in inflation that would depress living standards.

It is contradictory to assert that currency appreciation damages an economy, yet simultaneously deny that devaluation can ever offer economic gains. 'Negative evidence' for the anti-devaluation case is effectively positive evidence ***for*** devaluation.

His 'solution' is for the government to encourage services to offset an inevitable goods' deficit on the current account. His regressions show that the Marshall-Lerner condition is not met and that attempts to reflate the economy at above what he considers the long-term equilibrium growth rate will cause a decline in net exports. The deficit can only be reduced by proportionately suppressing domestic demand. He concludes the UK 'should tailor any current account deficit to whatever level of debt, (i.e. foreign lending on the capital account) that it finds acceptable'.

In 1992, we find that while Mills and Gould regard the post 'Black Wednesday' rise in UK growth as grist to their mill, Ashcroft attributes it to serendipitous rises in world demand coinciding with the devaluation and observes the ***continuing goods deficit***: the BOT is not price sensitive, demand-side policies are irrelevant, the UK has a structural capacity restraint.

This remains topical: Elliot, (2017) reiterates that the UK currently has insufficient capacity to expand production following the 2016 devaluation.

Two questions persist:

- **i.** Why do supply-siders cite currency appreciation as damaging UK industrial capacity but thereafter ignore exchange rates?
- **ii.** Is structural weakness and/or capacity constraint embedded in the UK's 'economic DNA'? The rest of the thesis, and Chapter 4.2 in particular, address this question.

3.4 Unwanted devaluations & the non-linearity of price elasticity

The confusion surrounding price elasticities and the Marshall-Lerner condition will now be resolved.

First is the conundrum of late unwanted devaluations. The UK has always regarded a high value for sterling as a badge of honour: Schenk (2010) records how all UK Governments resisted devaluation. When forced, they chose the minimum necessary, believing that the less devaluation the better, as typified by Wilson's belief 'there was absolutely no point in devaluation: it would solve nothing' (Ibid, p 171). We infer that whenever the economy finally succumbed (especially in 1967 and 1992), the devaluations were too little and too late, 1931 excepted.

After long periods of overvaluation manufacturers have lower margins than other sectors[13] and face a lack of capacity; unsurprisingly, Ashcroft finds UK industrial capacity is so diminished that export-led expansion cannot occur without inflation. Small and tardy depreciations merely enable companies to restore profitability by raising export prices, in domestic currency terms, by the full amount, thereby bringing their margins more in line with other sectors. Capacity expansion and import substitution do not occur. With insufficient capacity, production can only be switched to exports if the government tightens domestic demand to absorb the otherwise inflationary impact of increased export demand; this, in the short run, reduces domestic consumption.

If the cost-base for tradable goods is not brought into line with those of its competitors, the deficit will continue, precipitating continuing falls in the currency. Conversely, a country with an undervalued currency which thereby achieves

[13] See Chapter 5.4, item 5 and Tables 43, 44 & 45.

growing exports and import substitution, enters a virtuous spiral of rising productivity caused by rising growth. Provided that productivity growth in the export sector exceeds nominal currency appreciation, exports remain competitive.

Chapter 4.1 shows how firms trading with a competitive currency have greater returned earnings from which to reinvest and thus raise productivity. This thesis accepts Ashcroft's statistics but not his conclusions. If devaluation is too shallow and too late, industry continues to struggle.

Secondly, and this is intrinsic to the above cost-base test, anti-devaluation studies overlook one fact that is simple, salient and *true**: price elasticity is non-linear.***

Observation of an agent's behaviour can illustrate this, a priori of econometrics: if two cars or two mobile phones are equally desirable (of equal prestige, reputation, quality, reliability and have equal after sales back-up) and one is 30% more expensive than the other, would you switch to it if its price fell by 15%?

Surely not!

We observed Ashcroft (Ibid, p 363) holds that for the UK to raise its equilibrium growth rate it must 'first improve the income elasticity of UK exports relative to world growth or reduce the domestic income elasticity of imports'.

Overvaluation is the incubus of this problem. The income elasticity of demand for imports will inevitably be high, and their price elasticity low, if the UK cost base is too high for domestic producers to replace the imports. High price, poor quality and lack of capacity, induced by overvaluation, make UK exports price inelastic and imports income elastic. For example, as most light manufactures can be purchased from China 30% cheaper than they could be produced in the UK, (John Mills, 19th Sept. 2017), a devaluation of less than 30% will have a negligible effect on reducing UK imports from China or on increasing exports to China. Conversely, China's light industrial manufactures could rise in price by up to 29% and still have few western substitutes. The income elasticities of UK and US imports are thus higher than the income elasticities of their exports as found by Houthakker, H.S. and Magee, S.P (1969), cited by Ashcroft (1996, p.238), and confirmed by Crane, L. Crowley M.A. & Quayyum (2007), (Table 15).

Thus, if countries' cost bases are either very high or very low then prices have room to vary without having much effect on trade. This explains Ashcroft's regressions and those of Aiello et al (2015, p.18): 'Over the 1990–2012 period, we find that China's exports are price insensitive both in the long run and in the short run'

3.5 Depth of devaluation and the elasticity conundrum

Repatriating production involves change; inertia and satisficing slow change. Change involves managerial, organisational and disruption costs that must be covered. The more complex and embedded the supply chains the greater the resistance to change.

Light manufactures have relatively quicker plant and machinery installation times and are therefore a prime candidate for repatriation, provided agents are sure the new lower domestic cost base will be sustained.

Brand loyalty deters customers from switching brands unless they perceive a real advantage, so if repatriation involves a switch of brand, a slightly cheaper product will not suffice. A significant price saving, combined with costly marketing of the newly repatriated product is required.

Without a sufficiently deep and convincing devaluation, the Marshal-Lerner condition is not met.

Is it reasonable to assume that the deindustrialisation of the west has nothing to do with price? Why did Berwin suits transfer production first to Hungary then to China)? Their answer, (Davis, E. 2011, pp.102-104) was unequivocal: price. Figure 8 shows that when price elasticity of demand is incorrectly assumed to be linear (as in the solid red line), null hypothesis testing indeed shows no proof that price affects demand. Reality is depicted by the broken red line, which shows price elasticity only rises and the trade balance only improves, when the cost base differential has been closed (The composition of the cost base is analysed in Chapter 4). Until this tipping point is reached other countries experiencing growth will not import these over priced products, so their income elasticity

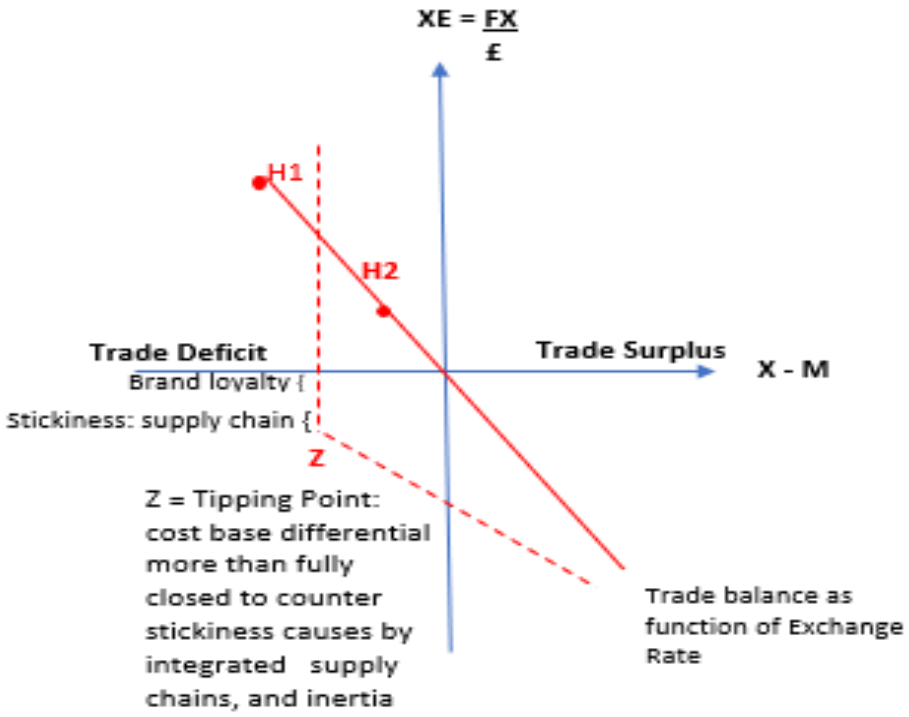
relative to world income growth is low. For a country with a heavily undervalued currency, exports are also price inelastic until the differential is closed.

In Figure 8, to allow for brand loyalty and supply chain stickiness the exchange rate must fall ***below*** the X-M axis.

Figure 8 The Price Elasticity Tipping Point

Fictional Assumption**:** Red line: price elasticity is linear

Reality: Broken red line: price-elasticity is non-linear



Exchange rate movements and consequent shifts in industrial activity from the West to Emerging economies and also ***between*** Asian economies in the last three decades, are proof of the high price elasticity of demand for exports and imports: 'Because of yen appreciation, production shifted from high cost Japan to create boom conditions in other East Asian countries' (McKinnon & Schnabl 2014, p.9, citing Kwan 2001, and McKinnon & Schnabl 2003).

The contrasting fortunes of Peugeot and VW evidence how price sensitivity can determine trading fortunes. In the early 2000s, VW, realising it could not afford the high costs of its German plants, concentrated on using them mainly for the higher mark-up brand of Audi; it got the unions to agree to lower hourly wages

and expanded its plants in Asia at a faster rate than Peugeot. VW flourished; Peugeot did not[14].

We conclude that trade is price sensitive and that deep and sustained exchange rate movements drive capital investment from overvalued to undervalued currency economies. Deep under or overvaluation can cause exceptionally low price elasticity of demand. From all the above, we derive that income elasticity trumping price elasticity for traded goods is symptomatic of heavily misaligned currencies, as recorded in Chapter 5.4, item 7.

3.6 Why devaluation needn't cause inflation

Contrary to conventional wisdom, it is an empirically established fact that devaluation in an industrialised economy need not cause much if any inflation: 'Large devaluations are generally associated with large declines in the real exchange rate (RER), (Burstein, A., Eichenbaum, M. and Rebelo, S. 2005)'.

Exchange Rate Pass-through (ERPT) to the CPI is incomplete in part because devaluation only affects imports, be these completed goods or imported inputs. Following years of manufacturing decline the total average import content of the UK CPI is, c. 35%. Thus a 20% devaluation would add a maximum of .2*.35 = 7% to the CPI, ceteris paribus. Pass-through to domestic prices (CPI) is defined as Broad Pass-through (Frankel, Parsley and Wei, 2011) while pass through to imports at the dock is Narrow Pass-through.

However, there are four factors which can further reduce ERPT. These are margin cutting, flight from quality, increasing productivity and the government's fiscal and monetary policy.

3.6.1 Cutting Margins

Both foreign and domestic producers and distributors can adjust their margins, thereby reducing ERPT. Campa and Goldberg (Ibid,) found distribution costs to be from 30% to 50% of retail price across the OECD and about 49% for the UK**.**

Of this, transport is usually less than 10%, heavy goods and ores excepted. Distributors (Wholesaler-Retailer, both domestic and foreign) therefore have

[14] See Rosemain, M. et al 2012

considerable influence on price. The greater their margins[15], the more agents can reduce ERPT by varying their margins.[16]

The higher the import content of a good the higher the ERPT, ceteris paribus. Tradables tend to have higher import content than non-tradables. While some non-tradables (such as haircuts) may have very little import content, many non-tradables have imported inputs. For the UK in 1995, Campa and Goldberg (Ibid,) found that both tradables and consumption goods contain 34% imported inputs. [17]

Dornbusch (1987) confirms that the higher the market share of foreign inputs in local distribution, the higher the rate of Broad ERPT.

It follows that the higher the rate of non-tradables in the CPI basket, then the lower Broad ERPT, and vice-versa, ceteris paribus.

For the UK, between 1970 and 2005, Campa and Goldberg (Ibid,) found non-tradables accounted for a high 66% of the CPI, tradables 23% and imports 11%.

Faced with rising import prices, foreign producers and foreign and domestic distributors have numerous motives to hold prices constant by reducing their margins. These include fulfilling existing contractual obligations, the desire to stay in business, maintaining good customer relationships, increasing profitability, maintaining or increasing market share and gaining advantage over competitors. These are not mutually exclusive options. For example, even if we assume conventional monopolistic competition, firms may reduce their margins or even run at a loss for a while to stay in business or drive competitors out of business**.**

Blinder (Ibid, p.95) lists the reasons firms gave for resisting price movements and concludes that over two thirds of companies have either direct contracts fixing

[15] Margins are calculated thus: Distribution Margin = Retail Price – Producer's Price/Retail Price.

[16] Campa and Goldberg (Ibid,) estimated distribution margins for the UK in 1995 as: Household consumption: 48.69%, Fixed capital: 7.19%, Exports:13.67%.

[17] In the 1960s imported inputs were much lower, down in the mid-twenties. This reflects the ongoing relative decline of the UK's manufacturing sector.

prices or implicit understanding, with over 90% of sales being repeat business. As Table 20 shows firms do not want to antagonise customers.

Table 20 Reasons for Price Stickiness

Table 4.2 A10(a): Why Don't You Change Prices More Frequently Than That? (n = 196 Responses from 151 Firms)

Response	Number of Firms
It would antagonize or cause difficulties for our customers	41
Competitive pressures	28
Costs of changing prices (B8)	28
Our costs do not change more often (B6)	27
Coordination failure, price followership (B10)	15
Explicit contracts fix prices (B1)	14
Custom or habit	11
Regulations	7
Implicit contracts with regular customers (B2)	5
Miscellaneous other reasons	20
Total	196

Source: (Table 4.2, Blinder, 1988 p.95.)

Six factors influence the extent of margin adjustment. They are the degree of competition, product differentiation, trade barriers, local currency pricing, inflation rates, and client relationships. Appendix 6 summarises these processes.

ERPT is also affected by whether agents perceive devaluation as permanent. Froot and Kemperer (1988, p.3), Taylor (2000, p.1397) and Krugman (1989, pp. 22:23) found that when exchange rate fluctuations are frequent and perceived as temporary, importers and their foreign suppliers are more likely to adjust margins and maintain market share. Alternatively, we surmise, importers threatened by import substitution who cannot cut their margins, may fold or be taken over. This may produce economies of scale for those remaining, bearing down on prices. However, with 'temporary depreciations' domestic firms do not invest and increase production to facilitate import substitution or increase exports, as they expect the currency to appreciate again.

Campa and Goldberg (Ibid,) estimate that across the OECD on average a 1% depreciation affects a 0 .47% decrease in margins.

Usually, when currencies depreciate, distributors reduce their margins while domestic manufacturers increase their margins or expand production and increase market share. Currency appreciation induces the reverse; Gagnon (2004) sums it up:

> 'Large exchange rate movements can coincide with stable consumer prices because firms in affected sectors absorb large changes in their profit margins. In UK after 1992 UK manufacturers increased operating surplus while distributors suffered significant decline in operating surplus. After 1996 the reverse happened.'

Gagnon, (Ibid,) finds that for twenty industrial countries long-run Broad-ERPT for the entire sample period is 0.23. Thus, on average, 1% depreciation causes 0.23% rise in consumer prices in the long-run.[18]

In recent decades, previously low pass-through coefficients have been falling further. On average, Narrow-ERPT has been assessed using aggregate data as .5. and Broad-ERPT may be .1. ***For the UK, Campa and Goldberg (2005) even found it to have the 'wrong sign', a negative .11*** (although this was not statistically significant).

Kashif, (2013) finds that even in an emerging economy such as Pakistan, ERPT is low. He finds that 'a one percent increase in price level of imports … results in 0.15 percent increase in CPI'. His regressions show that inflation is not a good determinant of the REER. (Appendix 8 contains his diagram of ERPT factors and chain of causation).

In conclusion, short-run margins are reduced following depreciation while in the long-run, depreciations perceived as permanent enable repatriation and import substitution. This is consistent with the '*j curve effect*,' which promises improvement in the BOP but only after an initial set back.

[18] Pass-through varies from near zero in Sweden to 0.52 in Greece (Ibid, p323).

3.6.2 Flight from quality

The second factor that reduces Broad-ERPT is Flight from Quality (Burstein, Eichenbaum and Rebelo, 2002). This is substitution towards inferior goods, when consumers switch from higher quality foreign goods to cheaper domestic substitutes. [19]

This figures strongly in Burstein et al's (Ibid,) model (Appendix 7) explaining how the 42.2% Korean devaluation of 1996-98 was followed by the CPI rate of less than 7%.

We now turn to the third disinflationary factor crucial for successful devaluations.

3.6.3 Increasing Productivity

Provided devaluation is seen as permanent and is deep enough to make domestic production competitive, import substitution can occur and existing exporters can increase production. The result is longer production runs, or new plant and machinery producing domestically what used to be imported.

We saw in the aforementioned post-Keynesian microeconomic analysis that rising productivity in manufacturing is facilitated by the falling average costs of longer production runs. Gagnon confirms (2004, p.6) that the faster technological progress in tradeable goods vis a vis the rest of the economy causes a downward drift of trade prices in relation to broader prices. This increase in productivity bears down on prices, further reducing ERPT. Mainstream economists accept that this can occur post-devaluation if two conditions are met:

1) Increasing productivity is achieved through the introduction of new technology, traditionally embodied in plant and machinery; in recent decades, this includes the incorporation of increased computerisation and digital information transfer.

2) The economy is growing below its 'equilibrium growth rate' so there is an output gap which prevents supply constraints in factors of production either causing inflation and/or preventing increased output.

[19] Arguably, this reduces living standards, but once the substitution is incorporated into the CPI basket it lowers the index.

They then predict a return to the 'equilibrium growth rate'. However, some, such as Kaldor and Verdoorn, allow a third possibility:

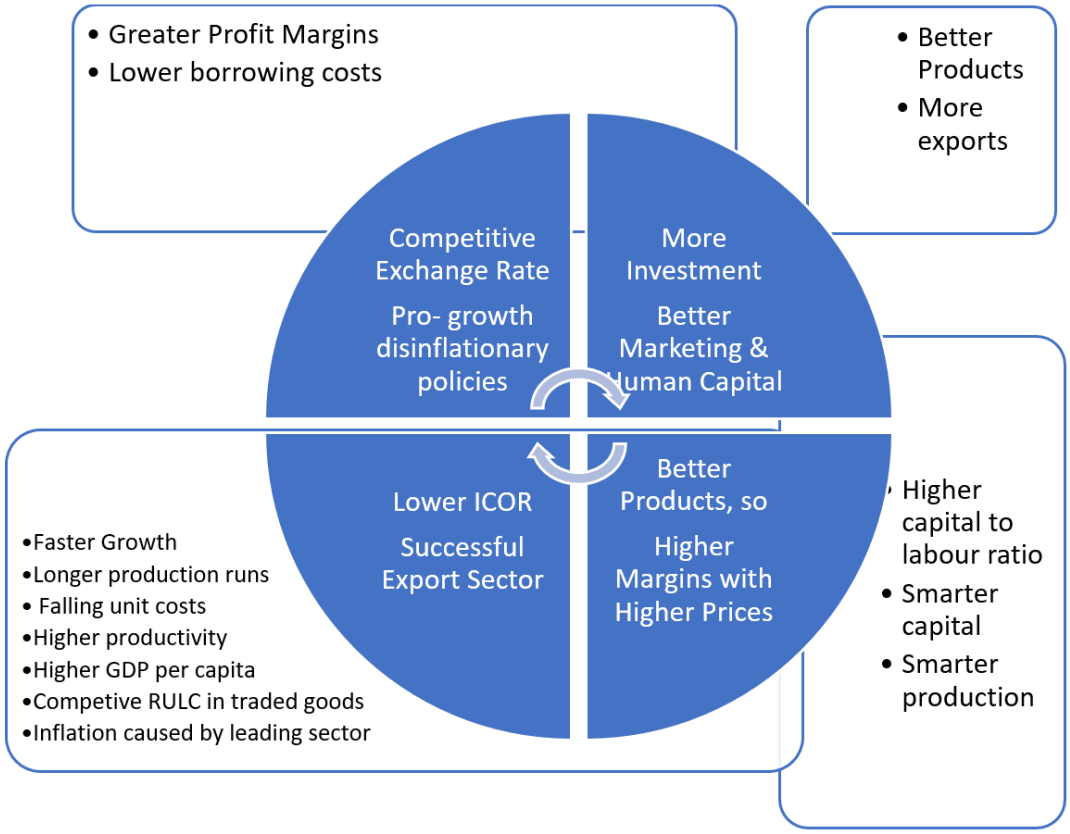
3) A boost to manufacturing through exports increases profitability. These profits can be invested in plant and machinery which increase capacity and reduce ULCs. This virtuous spiral lowers the ICOR and produces a path-driven export-led equilibrium growth rate higher than would otherwise be possible.

For Post-Keynesians however, since firms operate with spare capacity ***in normal*** times, an economy need not be in recession to benefit when devaluation produces a competitive currency. Furthermore, post devaluation, greater profits encourage investment and ceteris paribus, enable companies to borrow at lower interest rates.

Figure 9 shows this virtuous spiral.

Figure 9 Competitive Currency - Virtuous Spiral

Start inner top left segment



The above virtuous spiral runs counter to the anti-devaluationist assertion that workers cause inflation by demanding higher wages when they see through money illusion. The assumption is that devaluation causes inflation which, when workers belatedly realise their real wage has fallen, causes them to demand higher wages, thus contributing to an inflationary wage push spiral. In reality, a combination of margin cutting, rising productivity and disinflationary fiscal, monetary and industrial policy (see below) can contain inflation; inflationary wage demands are therefore not forthcoming so the money illusion hypothesis does not apply. Any wage demands that are granted are absorbed by rising productivity.

3.6.4 Disinflationary Fiscal and Monetary Policy

The fourth disinflationary factor is a fiscal and monetary policy to promote growth, contain inflation and facilitate the virtuous spiral of Figure 9.

A pro-growth disinflationary fiscal policy is a reduction in V.A.T. Also advantageous is a reduction in payroll taxes; this makes labour costs more competitive, thereby encouraging employment and growth. Both of the above tax cuts are feasible because when an economy grows fiscal loosening need not reduce tax revenue.

Regarding monetary policy, expectations play a role. Gagnon (2004, p. 332) finds that agents expecting monetary authorities to stabilise inflation via a tight monetary regime are less inclined to change prices given exchange rate shock. Gagnon & Ihrig (2004) show this occurring between 1977 and 2003 as Governments and Central Banks bore down on inflation.

However, *lower* interest rates, offset by a tighter overall fiscal policy, (excluding payroll taxes) can also contain inflation: UK interest rates add not just to firms' borrowing costs but to the cost of commercial and domestic property. Lower interest rates therefore have a disinflationary effect on business overheads, borrowing costs and wage costs. If accommodation costs fall, wage earners feel less pressured to demand higher wages. And once again, lower interest rates can encourage capital investment, increasing productivity and thereby lowering inflation, as per Gibson's paradox, cited by Jackson, A and Dyson, B. (2012, p. 106).

Finally, as part of an industrial strategy, governments can offer concessionary business rates, grants and extra capital allowances to manufacturers.

To harness the potential of devaluation a proactive mix of fiscal and monetary measures can ***expand*** the economy, funnel support to production and create a less inflationary environment.

3.7 Conclusion

From all the above, LOP clearly does not ***necessarily*** hold for imports at the dock even in the short run. It certainly does not hold for non-tradables, failing by large margins. It is now generally accepted that 'goods markets are less integrated than once thought' (Gagnon. 2004).[20]

Finally, a devaluation is a finite event. Once any inflationary blip has passed, the devaluation ceases to affect inflation. The theory and empirics of low ERPT do not support the anti-devaluation claims. Appendix 10 contains tables summarising ERPT statistics.

The absence of inflation after devaluation occurs because the increase in price of imports and imported inputs is fully offset by the disinflationary effects of a combination of adjusted margins, increasing output and productivity and appropriate fiscal and monetary policy. We agree with Mitchell, (2016) that in line with empirical evidence 'there is insufficient pass-through to derail a full employment program based on stimulating domestic demand.'

[20] The reduction of margins is consistent with firms not operating under perfect competition. They price, by choosing a mark-up on costs, as noted in 2.6.3.

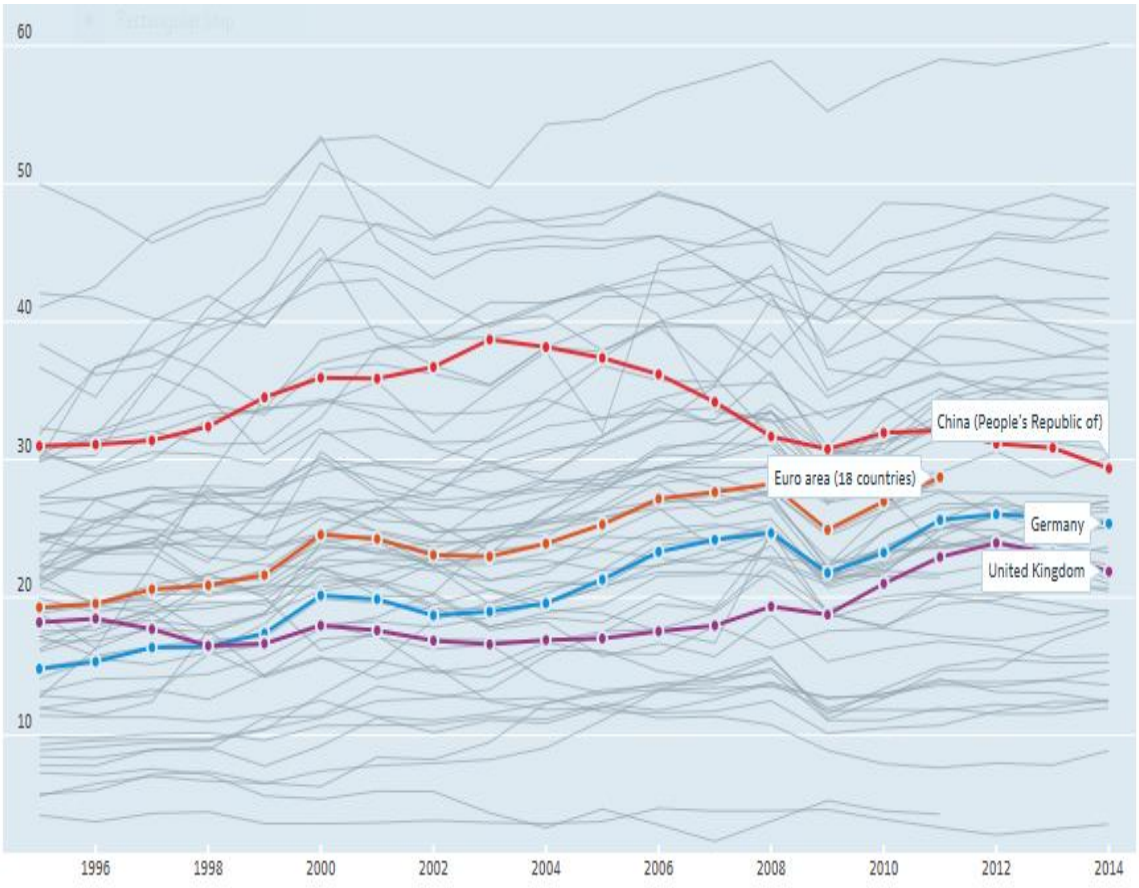
4. The Arithmetic of Devaluation. How much does the UK need?

This chapter shows the relationship between the exchange rate and export profitability. It then counters further common objections to devaluation. It ends with policy recommendations.

4.1 The Cost Base

The cost base comprises costs incurred at world prices and those incurred in domestic currency. For the economy ***as a whole*** the import content of UK exports, incurred at world prices, in 2014 was 21.9%, lower than China (29.4%) and Germany (25.4) (Table 21). This is because of the UK's emphasis on services.

Table 21 Import content of exports. Total, % of gross exports, 1995 - 2014



Source: OECD (2017), Import content of exports (indicator). doi: 10.1787/5834f58a-en (Accessed on 29 November 2017)

Domestic costs include direct labour, indirect labour and all the non-labour costs, such as land, premises, interest charges and taxes. Together these typically sum

to 80% of service sector costs. However, for manufactures they are lower; in accordance with the experience of John Mills Ltd, and with the sector analysis of the ONS (Economic Review, March 2014) for ***manufacturing*** they sum from 60% to 66% of costs.

The OECD finds the input-output intermediate import ratio for UK manufactures in the mid-2000s was 36% (***STAN Input-Output Intermediate Import Ratio,*** *https://stats.oecd.org/Index.aspx?DataSetCode=BTDIXE).*

Table 22 thus shows materials and capital depreciation costs incurred in world prices at between 30% and 46%, varying with currency parities. The remaining costs, including profits, are born in local currency. The exchange rate determines the value of these costs when measured in non-domestic currency.

The columns show in broad-brush arithmetic the situation facing firms in four economies: one with a currency allowing net trade to sum to zero, in which domestic costs for manufactures, in aggregate, are in line with world prices. The subsequent columns show the situation for an economy with 25% undervaluation, and two more with 25% and 10% overvaluation respectively. Note that countries with undervaluation, with strong exports and higher growth, tend to have lower raw material costs due to economies of scale and lower imported inputs; countries with overvaluation experience the reverse.

We observe that undervaluation, provided the tipping point has been reached, creates export profitability and overvaluation causes lower profitability or losses.

Provided total imported costs are below 50%, the lower the exchange rate the higher the ROR. For example, an economy trading at 25% below parity achieves a 28% profit, whereas 25% overvaluation produces a 21% loss. A ten per cent overvaluation produces a 7% loss, requiring firms to sell at higher prices and to find savings to produce any retained earnings at all. Such firms wishing to invest in supply-side improvements therefore depend entirely on borrowing, and face higher borrowing costs because banks are averse to lending at low rates to companies with dubious profitability. The vicious circle of low morale, poor human capital and industrial strife is likely to set in.

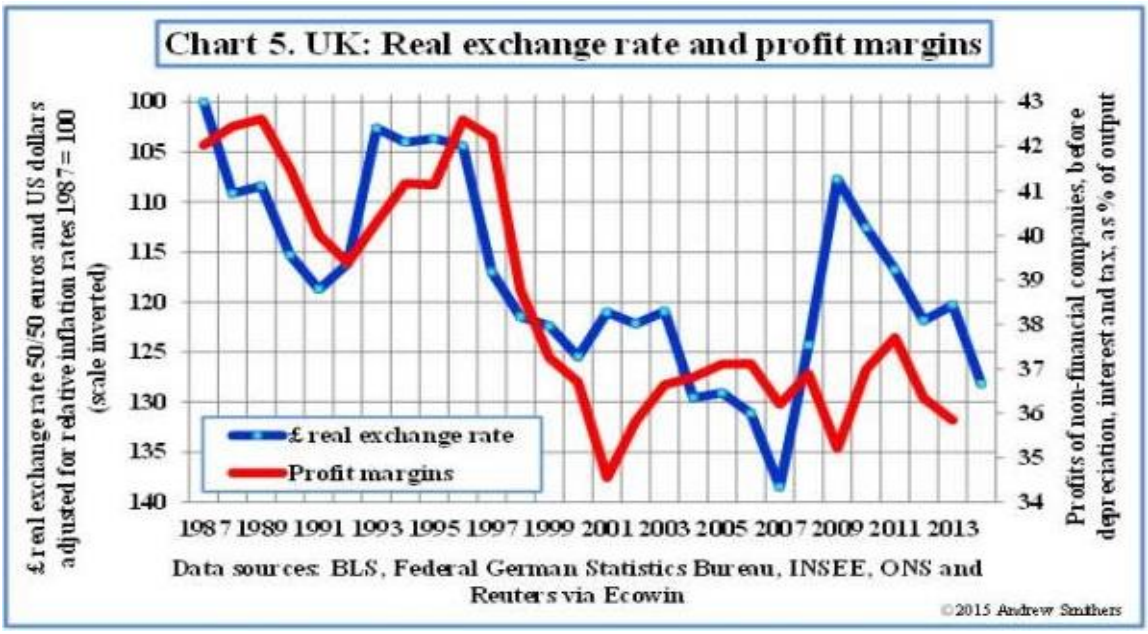
Table 22 The Exchange Rate and Profitability for Exporters

All Costs in World Prices	Correctly Aligned Parities	Parities 25% below average (undervaluation)	Parities 25% above average (overvaluation)	Parity 10% above average (overvaluation)
Imported Content				
Raw materials & Imported intermediates	20	19	34	30
Depreciation of imported Capital Stock	10	8 (low because of higher capacity utilisation & lower import content)	12 (high because of lower capacity utilisation and higher import content)	11
Total Imported Costs at World Prices	**30**	**27**	**46**	**41**
Costs Incurred Locally				
Direct Labour Costs	15	11.25	18.75	16.5
Local Supplies (incl. any raw materials and machinery) Distribution, Salaries, Land Premises and Interest Charges	45	33.75	56.25	49.5
Total Local Costs at World Prices *	**60**	**45**	**75**	**66**
Total Costs	90	72	121	107
Average World Prices for Output	100	100	100	100
Trading Profit or Loss at World Prices	**10**	**28**	**-21**	**-7**

**For any given product the precise mix of costs varies. In car manufacturing the direct labour cost in the factory can be around 15%. Local supplies, and distribution costs likewise vary. All of these costs together may typically sum to 60% of total costs. They are domestically incurred and the exchange rate determines their value in foreign currency, i.e. their cost to potential overseas customers*

Figure 10 confirms the above analysis, showing how between 1987 and 2014 the profits of UK non-financial corporations rose and fell inversely with the real exchange rate.

Figure 10 UK Real Exchange Rate and Profit Margins



Source: Chart 5 in Has labour lost out to capital? Smithers 2015 FT Ltd April 1st 2017 Andrew Smithers' blog April 1, 2015 by Andrew Smithers. Available at: https://www.ft.com/content/316c18af-c6b3-307b-80d5-22fbad0c39bb. (Accessed: 12th October 2017).

4.2 Structural Solutions Require a Competitive Currency

Better quality products, better training, better sales and marketing, new plant and machinery (capital deepening), more research and development and attracting the best human capital, ***all*** these supply-side remedies **cost money.** The profitability provided by a competitive currency provides this finance; firms have retained earnings for investment and their profitability enables them to borrow at lower interest rates. This facilitates the 'Kaldor-Verdoorn virtuous circle (spiral). Thus, the BPC and the apparently supply-side problem of too high a marginal propensity to import ***are*** related to the exchange rate. ***Overvaluation, therefore, severely inhibits supply-side remedies.***

4.3 Rebutting Further Objections to Devaluation

1) Currency Wars

Opponents of devaluation argue other countries would retaliate against a beggar-thy-neighbour policy thereby causing a war of competitive devaluations, after which no one gains.

This is not the argument being proposed. Devaluation is benign to trading partners when implemented by an economy which has a BOT ***deficit***.

As the experience of Europe during the SNAKE, the ERM and the Euro illustrates, when currencies adjust for changes in competitiveness, this promotes growth. Conversely, when a country is uncompetitive and suppresses demand to contain its trade deficit, it imports less. Overall surplus and deficits must sum to zero because every import is someone else's export, so when a trade deficit country reins in demand this has a deflationary impact on the surplus countries too. Harvey (2009. P129) notes:

> 'Thus, the operation of our exchange rate system introduces to policy a contractionary bias, as those with trade deficits may have an incentive to shrink their economies. As their imports fall, so deflation is passed on to their trading partners, who may respond in kind.'

On the other hand, when differences in competitiveness are addressed by currency realignments overall deflationary impacts are reduced:

Table 23 Locking Currencies Slows Growth

Period	Years	Euro Area/EMU	EU/EUU	EU AV	UK	UK AV
1	1950-1969			5.5		
2 SNAKE	1969-1975	6.95 to -0.76	5.79 to -0.78	3.9	2.05 to -1.49	2.6
3	1976-1979	5.02 to 3.85	4.60 to 3.83	3.62	2.92 to 3.74	3.3
4 ERM	1980-1993	2.15 to -0.66	1.47 to -0.15	0.29	3.74 to -1.12*	2.4
	1994-1997	-0.66 to 2.72	-0.15 to 2.77	2.57	-0.12 to 3.13	2.9
5 Euro	1999-2007	2.99 to 3.02	3.03 to 3.08	2.55	3.28 to 2.56	2.9
6 Euro Post GFC	2008 - 2016	0.43 to 1.75	0.46 to 1.87	0.05	-0.63 to 1.81	-0.1

* 1980-1991: the UK was then ejected from the ERM in 1992.

Source: Rows 2,3,4 & 5: World Bank Open Data 2017; Row 1: Table 9.1 Mills 2012 p. p181 citing sources as Table 7 on pages 201 and 121 in National Accounts 1960-1992. Paris OECD, 1994 and Table 0101in Eurostatistics 11/95 and 4/00. Luxembourg: the European Community, 1995 and 1999

Overall Eurozone growth contracted when the economies locked their currencies and expanded when their currencies floated. If the world economy is a convoy,

the potential speed of faster vehicles is restricted by the sluggards: the convey is only as fast as its slowest member. Exchange rate realignment allows weaker economies to release the deflationary brakes thereby helping themselves ***and*** the growth of their competitor trading partners. This is consistent with Rodrik (2007) who finds that undervaluation promotes economic growth in the countries concerned but that trade imbalances inhibit growth globally.

The 'retaliation objection' is thus theoretically flawed; it also empirically unfounded: Japan deliberately depreciated the yen against the dollar by a third between the beginning of 2013 and the start of 2015 and faced no retaliation; the UK accounts for a mere 2.7% of world trade and would not be trying to achieve an anti-social export surplus.

Keynes proposed a solution (called BANCOR) for combining differing productivity levels with mutually advantageous trade. BANCOR would have imposed fines on surplus countries.[21] Unfortunately, the USA, then a creditor nation, rejected Bancor. The ensuing Bretton Woods system allowed revaluation and devaluation but the onus fell on the deficit countries to deflate.

In 1972, the inflationary shock precipitated by the USA's overspending coupled with the leap in oil prices, paved the way for the monetarists, under Friedman, to argue for the use of money supply targets to control inflation leaving exchange rates to float. The expectation was that floating exchange rates would return international trade to balance, yet, before the demise of Bretton Woods, Friedman, as Hanke (2008, pp. 275:284) explains, had qualified his expectations that floating exchange rates would resolve BOP problems.

Indeed, under floating exchange rates, the aim of inflation targeting has overridden exchange adjustment, allowing the over-weaning power of surplus countries to continue. The UK and other advanced economies that have used higher interest rates to control inflation, have put upward pressure on their exchange rates. Many governments regard a high exchange rate as a tool for containing inflation.

[21] Harvey (Ibid,) and Varoufakis have argued for a similar system today.

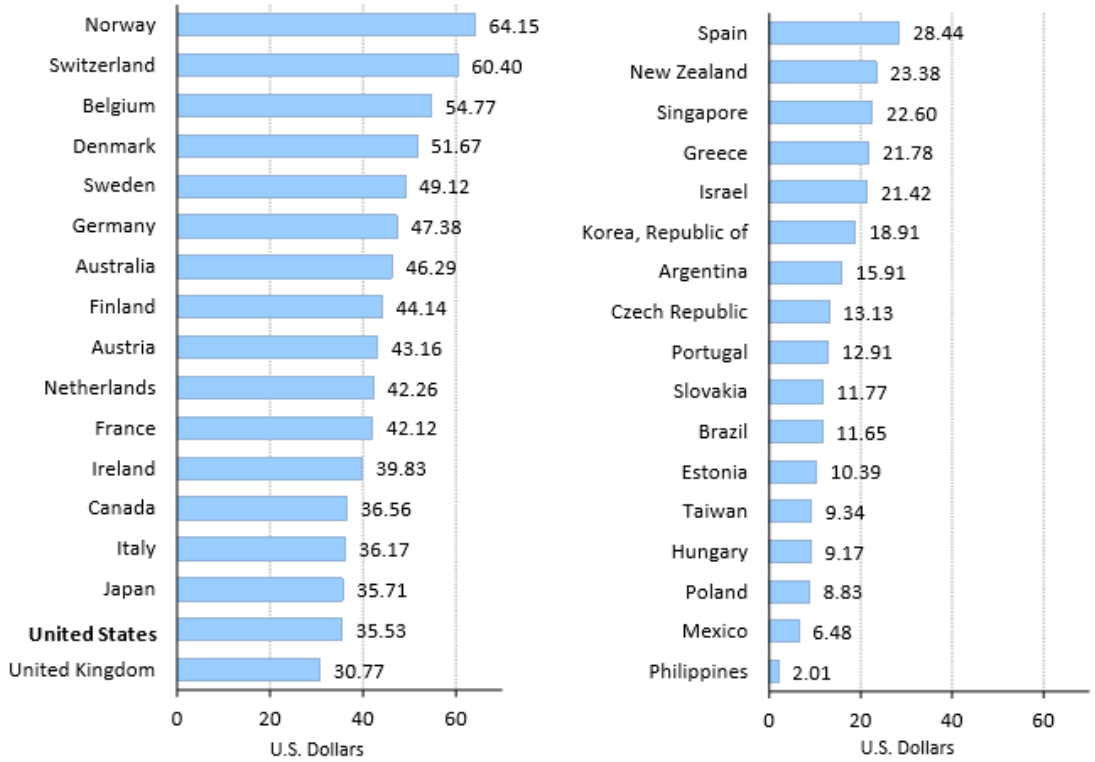
As Marc Lavoie concludes (2009, p.82):

> ‘There exists a deflationary bias in an open economy framework; countries with an external surplus are never constrained into pursuing the expansionary policies that would compensate for the restrictive policies put in place by countries with external deficits’.

2) The Cheap Labour objection

As noted in Chapter 3.2, the UK’s relative decline and overvalued exchange rate has sometimes been attributed to high labour costs, implying competitiveness should be restored by wage suppression. It is important to recognise that cheap labour costs per hour do not of themselves make an economy competitive. UK labour costs are relatively low (Table 24), and many countries in Sub-Saharan Africa are cheaper still, below China or Vietnam.

Table 24 Manufacturing Labour Costs



Source: Chart 1 Hourly Manufacturing Costs in U$ 2011 BLS US Department of Labor Available at https://www.bls.gov/news.release/pdf/ichcc.pdf (Accessed 29th November 2017

It is the labour costs of traded goods, adjusted for productivity, i.e. relative unit labour costs, which are the better metric, to which we must add transport and distribution infrastructure, property rights and the rule of law. Once these are

factored in, the exchange rate determines whether the resulting cost base is competitive.

As Table 24 and 25 indicate, high labour costs are not the cause of the UK's decline.

Table 25 Labour costs per hour worked in euros in different sectors 2015

Country	Private Sector	Rank in EU	Public Services	Rank in EU	Manufacturing	Rank in Eu
Denmark	43.0	1	43.6	1	42.4	2
France	35.7	5	35.6	5	37.0	5
Netherlands	33.3	7	32.6	6	34.8	8
Germany	32.7	8	29.9	9	38.0	4
UK	29.1	10	29.0	10	28.3	11
Poland	8.4	23	8.5	23	7.7	22
Hungary	8.1	24	8.3	24	7.6	23

Table 1: Labour costs per hour worked in euros by kind of economic activity in 2015 Herzog-Stein et al (2016, p. 8)

As in the 1960s, UK RULCs are not overly high.

High labour costs have been blamed for the West's failure to compete against emerging economies. This implies that the labour share in emerging economies is lower than in the west. Indeed, low labour costs in the emerging economies have been proposed as exerting downward pressure on wages causing a decline in the labour share in western countries, as cited by the ILO (2015):

> 'Studies typically also find smaller negative effects of globalization on the labour share in high-income countries, possibly due to the intensification of competition and the entry of labour-abundant countries into the global economy which may have worked as a wage-moderating factor (ILO, 2008). It is also possible that redistribution from labour to capital has occurred through offshoring or the so-called 'threat effects' that can occur even without actual changes in production locations (Epstein and Burke, 2001)'.

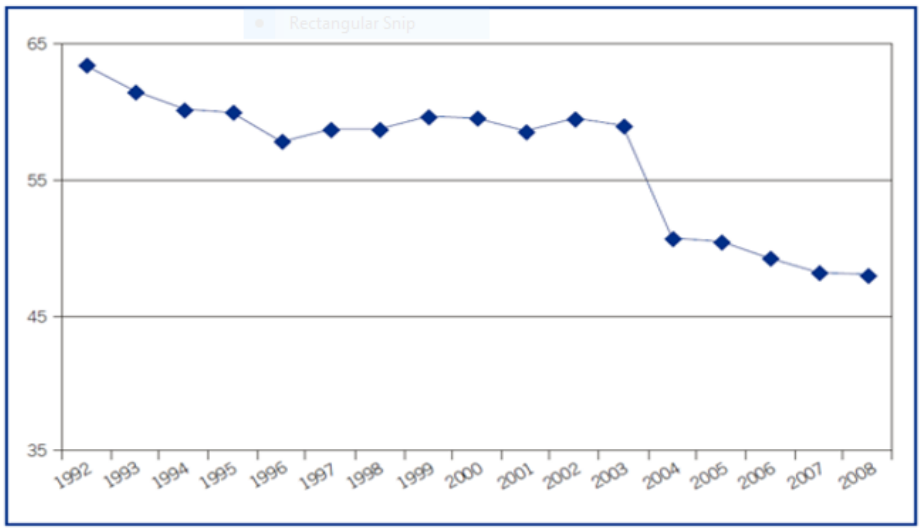
But is the western labour share still too high to enable the West to compete?

Labour share figures must be adjusted first for capital taxation and capital replacement, which should be deducted from capital income, and secondly, for

self-employment, which is higher in emerging economies than in advanced countries.[22] As stated (ILO 2015, p.14): ***'Once labour shares are adjusted for self-employment, it is not obviously the case anymore that labour shares are lower in poorer countries (Gollin, 2002; Guerriero, 2012)'.***

Figure 11 shows the ***unadjusted*** Chinese labour share (which underestimates labour share) fell from 64% in 1992 to 47% in 2008, a 16% fall.

Figure 11 Chinese Unadjusted Labour Share 1992-1998



Note: The unadjusted wage share is calculated as total labour compensation of employees divided by value added. The sudden change between 2003 and 2004 likely reflects an adjustment to the data; nonetheless, it does not change the direction of the trend.

Source: ILO calculations based on data from the China Statistical Yearbooks, http://www.stats.gov.cn/english/statisticaldata/yearlydata/ (Accessed 17th September 2012).

Table 26 shows unadjusted labour share in ten advanced economies falling, but to a higher level than in China. The US and UK shares fell by 4% and 5% respectively between 1970 and 2007. At 60% the UK is below Denmark and Sweden but above Germany and France**.** While different starting dates obscure a precise comparison, the fall in the Chinese labour share was only 11% more than the fall in the UK's (16% less 5%), yet the Chinese REER fell by *60%.*

[22] Note that post GFC in the UK, self-employment is on the increase and correlates with rising inequality and falling median wages.

Table 26 OECD falling wage shares

	Wage share (% of GDP)		Change
Country	1970	2007	
Australia	60	53	-7.1
UK	65	60	-5.3
Sweden	66	61	-4.9
Canada	59	55	-3.8
Germany	59	55	-3.7
USA	64	60	-3.1
France	56	57	+0.9
Finland	55	56	+1.0
Denmark	59	65	+6.1
Japan	41	49	+8.2

Source: Table 1: How to boost the wage share. Touchstone Pamphlets The wage share in ten advanced economies, 1970–2007 *Reed and Mohun Himmelweit, 2012; based on OECD data as presented by Bailey et al (2011)*

As noted, it is more realistic to use adjusted figures. Taking Guerriero's preferred metric of LS4 (Table 27) it appears the differential between Chinese and Western Labour Share lies between 4% and 8%.

Table 27

Alternative Measures of the Labour Share

		LS1	LS4	LS6	EC 1960-2006
China		.62			
France		.68	.77	.73	.61
Germany		.70	.82	.74	.62
India		.50			
		.56	.73	.7	
Japan		.64	.72	.79	.68
Korea		.53		.77	
Malaysia		.34		.50	
Slovakia		.56	.77	.63	.44
Slovenia		.74	.84	.85	.64
Switzerland		.77		.87	
UK (1992)					.65
USA		.70	.82		.64

Source: Extracted from Appendix E in Guerriero, 2012, pp. 31:33

A maximum 8% differential cannot account for the huge difference between the Chinese and Western cost base which, as we witness later in Chapter 6, is at least 30%.

Figure 12 shows the nominal depreciation of the yuan against the dollar. Comparing China and the UK , Figures 12 and 13 confirm that the ***REER moves with the nominal rate***. From all the above we derive that that it is the exchange rate, not wage repression, that substantially accounts for the cost base differentials between countries.

Figure 12 China, Germany, UK - Nominal Exchange Rate (LCUs to dollar)

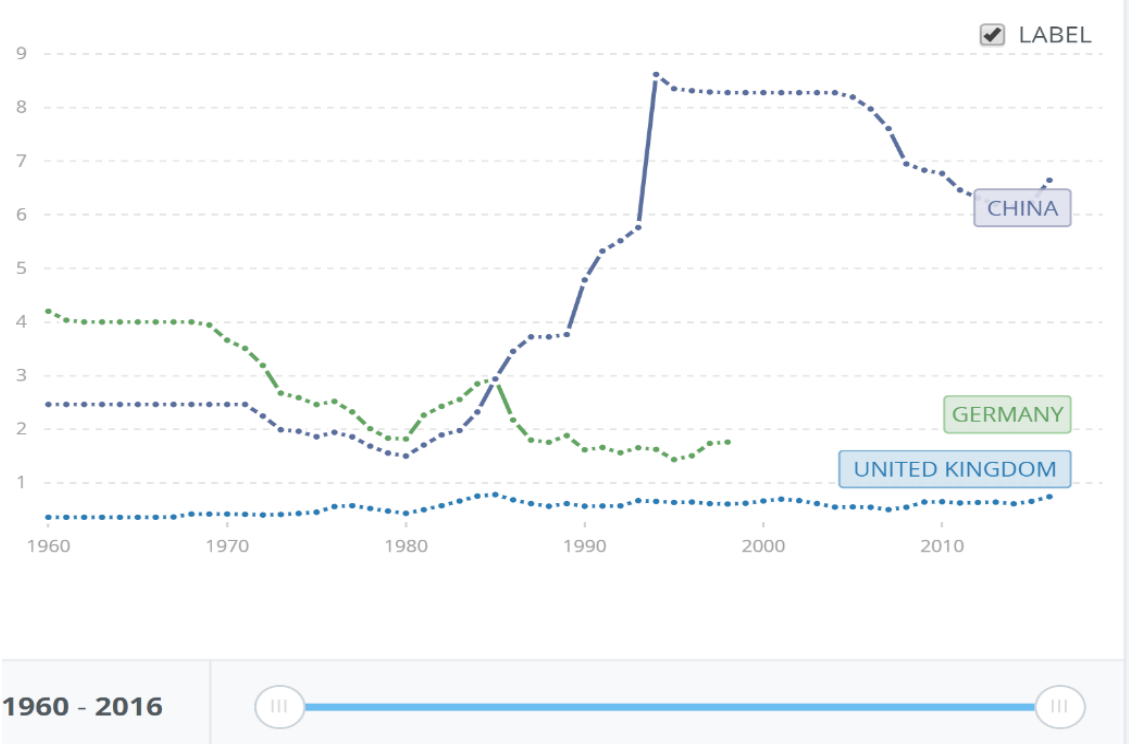


Figure Source: World Bank Open Data. Available at:
https://data.worldbank.org/indicator/PA.NUS.FCRF?locations=DE-CN-GB
(Accessed 08 October 2017).

Figure 13 REER correlates with Nominal Exchange Rate

REER (Real Effective Exchange Rate 2010=100)

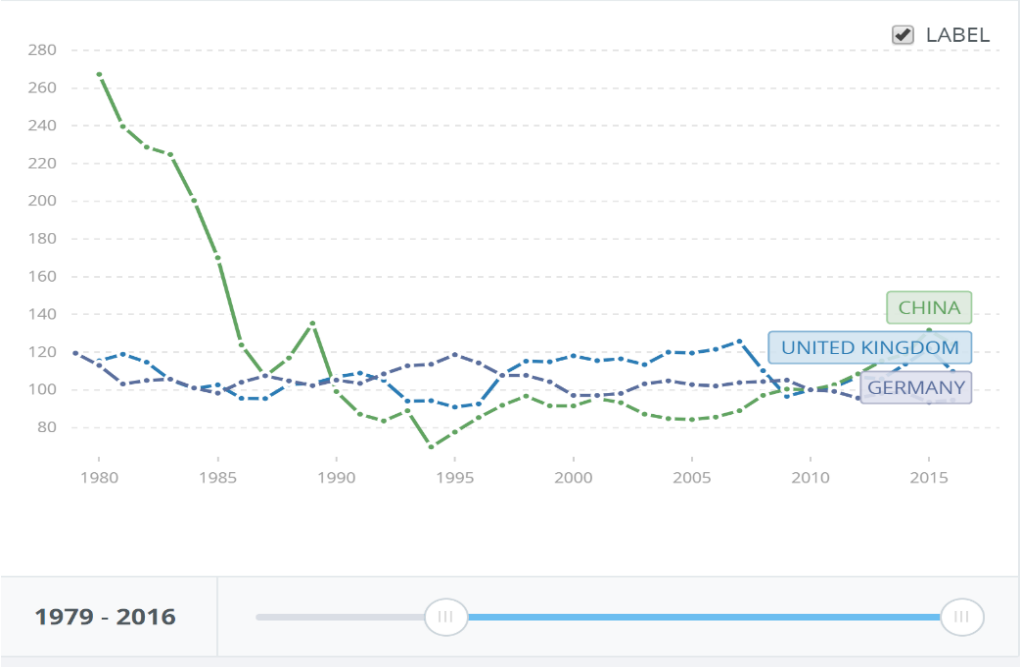
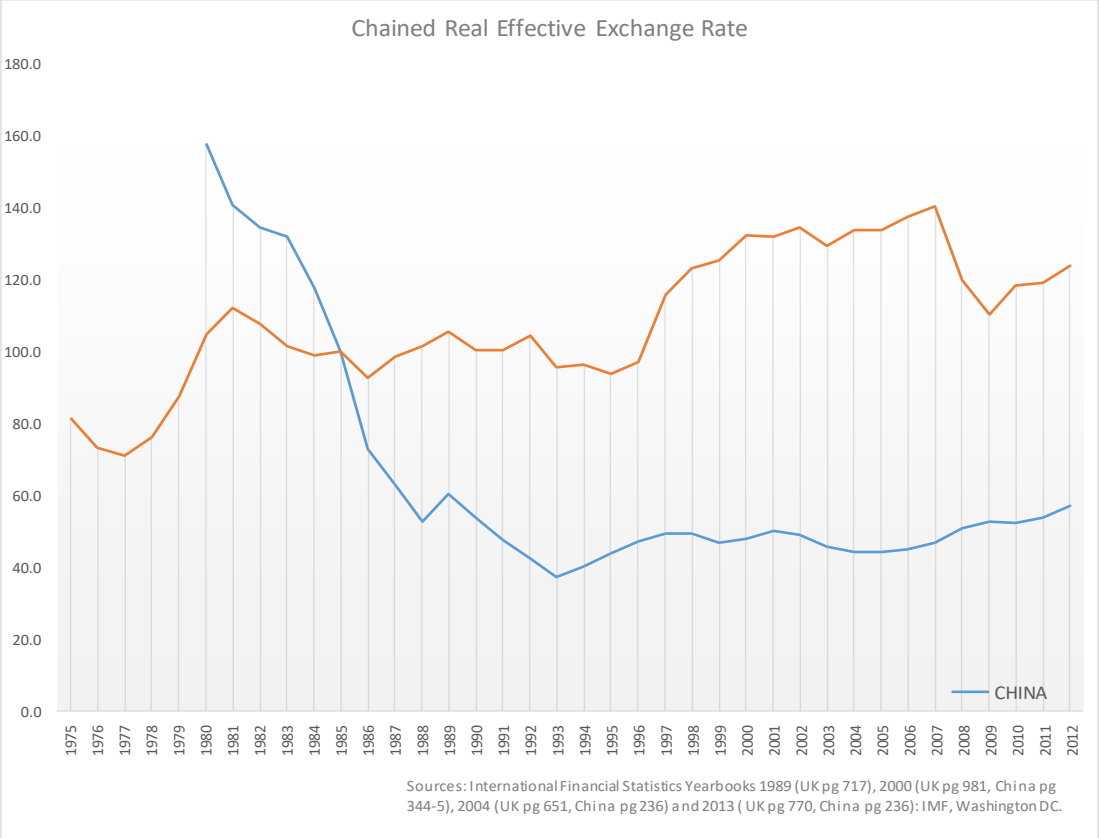


Figure Source: World Bank Open Data, Available at: https://data.worldbank.org/indicator/PX.REX.REER?locations=CN-GB-DE. *(Accessed 08 October 2017).*

Figure 14 shows why UK industry can no longer compete. The UK's REER has increased and China's decreased, creating the large cost base differential**.**

Figure 14 Chinese Devaluation Against Sterling



Source: (Mills (2017 p.17) China versus UK Chained effective Exchange Rate)

Table 28 also shows that for China domestic inflation was higher than in the west, demonstrating again that it was the nominal exchange rate that drove down the REER:

Table 28 High Levels of Chinese inflation

China	**1981**	**1982**	**1983**	**1984**	**1985**	**1986**	**1987**	**1988**	**1989**
Inflation							7.2	18.7	18.3
China	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**
Inflation	3.1	3.5	6.3	14.6	24.2	16.9	8.3	2.8	-0.8

Source: IMF Dataset: IFS, Consumer Price Index. All items. Percentage change. Previous period. Percent. Available at: http://data.imf.org/?sk=4C514D48-B6BA-49ED-8AB9-52B0C1A0179B&sId=1393552803658 *(Accessed 07the December 2017)*

3) Internal rather than external devaluation

The UK's decline is not attributable high labour costs per hour, but to RULCs of its tradable goods sector, determined by the exchange rate. The anti-devaluation case may seek to address this through wage repression, often referred to as 'internal devaluation'. Is this an effective way of reducing the price an economy charges the rest of the world for its goods and services?

Suppose, for the sake of argument, that when the Eurozone crisis struck, Greece's relative unit labour costs for its traded goods were 30% too high. A thirty per cent wage cut would shrink the economy and cause massive unemployment but it would not reduce the other 40% of costs charged out to the rest of the world as itemised in Table 22. The Greek experience bears this out. A devaluation, on the other hand reduces all these costs and is thus more effective. Furthermore, it need not suppress demand or shrink the economy. The internal devaluation requires wages not be sticky, which implies a very weak labour force. ***An external devaluation requires the creditor class, rather than the labour force, to shoulder the burden. It is ultimately therefore a political decision.***

We return to this matter in Chapter 5.3.

4) The UK should not do low-tech

This objection continues the cheap labour argument, the leit-motif being that with higher labour costs the west should leave low-tech to 'the poor' and concentrate on high-value added high-tech industry.

Thus, it is argued, the UK and the GIPS (Greece, Italy, Portugal & Spain) need structural change to achieve this goal. While Germany doubtlessly excels at complex manufacturing, observation reveals two salient but oft ignored points:

First, Germany and other high-tech countries have taken decades of endogenous learning-by-doing, to achieve their expertise; secondly, even for Germany, only a minority (32%) of its exports are complex manufactures; 60% are medium or low-tech. High-tech manufactures always form a minority of exports not just in the UK (Table 29) but in our more successful competitors too, (Table 30).

Table 29 UK Export Composition

Table 9 Analysis of export trade percentage by high medium and low technology goods 1971 – 1991 (All figures percentages)

Exports	1971	1981	1991	81/71	91/71
High	17.6	22.6	31.5	=5.0	+8.9
Medium	49.4	49.0	42.7	-0.4	-6.3
Low	33.0	28.3	25.9	-4.7	-2.4
Totals	100	100	100	0.0	0.0

Table 10

Imports					
High	14.4	19.1	26.4	+4.7	+7.3
Medium	33.6	38.2	38.7	+4.6	+0.5
Low	52.0	42.7	34.9	-9.3	-7.8
Totals	100	100	100	0	0

Source: Tables 9 & 10 Ashcroft, 1992 p.301

Ashcroft noted (1992, p.304): 'It is apparent that the UK experienced a continuous and deteriorating deficit in ***the low technology*** sector.

'One of the main reasons put forward (to explain the UK's export failure) is that exporting is less profitable than selling at home so when total demand (home and export) exceeds the maximum output, the preference is given to home sales.' (Ibid, p.341).

This is inevitably true when overvaluation reduces or obliterates export profitability.

Table 30 shows that in 2015 countries with a larger manufacturing sector have a better spread of export manufactures but nevertheless High-Tech are in the minority. Germany, whose manufacturing exports amount to c. 37% of GDP, boasts only c. 7% from the high-tech sector, the remaining 30% coming from medium-high to low.

Table 30 (for 2015)

Manufacturing Exports as Percentage of GDP					
Country	High-Tech	Medium High	Medium-Low	Low-Tech	Total
Holland	12.4	16.7	13.5	11.4	54
Germany	6.8	18.6	6.2	5.3	36.9
Sweden	5.8	11	7	6	29.8
Italy	2.3	8.6	5.5	5.7	22.1
France	4.8	6.9	3.2	3.8	18.7
UK	4.3	5.9	3.1	2.4	15.7

Source: OECD (www.stats.oecd.org/index.aspx?DatasSetCode=BTDIXE)

The path for countries to achieve a trade balance is not to attempt a heroic leap from a medium and low- tech to a high-tech economy, but to start from where they are and build their expertise: China started with light manufacturing and, with its exchange rate suppressed, is using its high ROR to invest its way towards greater complexity. Western High-tech industry may presently enjoy protection due to intellectual property rights, branding and the necessary decades of endogenous learning, but it will not be immune to eastern competition indefinitely.

5) W**age-led growth versus devaluation**

A series of econometric studies done by Post-Keynesian economists conclude that the European Union as a whole has a wage-led regime (Jump, L. & Mendieta-Munoz, I. 2016, and Lavoie, M. & Stockhammer, E., 2013). However, attempts to reflate wage-led trade deficit economies such as the UK by increasing the wage share will falter because, without an exchange rate policy, too high a marginal propensity to import will impose the BPC, as confirmed by Onaran and Galanis, (2012, p.32 Table 11.) Reflation through increased wages is more appropriate in the trade surplus countries.

Post-Keynesians have admitted that an increase in wage-led demand in the currently wage-led German regime together with wage increases in the GIPS will not on their own suffice and must be accompanied by a fundamental improvement in the industrial structure of the GIPs, the heroic leap referred to above. It would be easier for the GIPs to increase their growth if they could compete with the ROW in medium and low-tech first. The GIPs

need to devalue: ‘At the same time, of course, the euro is overvalued for the periphery’ (Storm and Naastepad, 2014, p. 26). They cannot devalue but the break-up of the Euro would induce massive short-term dislocation, hence the stalemate.

5. Exchange Rate Determination and Overvaluation

This chapter defines an overvalued currency and explains why it is socially damaging and in the long run unsustainable.

Rodrik (2007) gives two metrics for assessing currency valuation, one based on price the other on the trade balance:

1) Definition based on price:

The exchange rate is set such that goods produced at home are cheap in dollar terms (Rodrik 2007, p11), i.e. when the exchange rate is set so that domestic goods are cheap in international currency, the domestic currency is undervalued and vice versa.

2) Definition based on the external balance:

An equilibrium exchange rate is one that is estimated to achieve balance of payments equilibrium.

This thesis assumes 1) as the starting point. It then suggests that by empirical estimation of the price changes needed to make enough goods internationally competitive, one arrives at the exchange rate necessary to achieve a trade balance.

An overvalued exchange rate is one that does not bring the cost base for manufactures into line with world prices, leaving an economy with an overreliance on invisibles and/or capital account inflows.

This thesis sees a dependence on invisibles as inhibiting growth, while a dependence on capital inflows also inhibits growth and is, in addition, unsustainable. Both are detrimental to social cohesion.

Our definition therefore contains the two positive propositions of slow growth and unsustainability, and a normative element, that social cohesion is desirable.

The thesis has shown that services do not achieve the same increases in productivity as manufacturing and that manufactures form the majority of trade. An economy relying on invisibles to offset a goods deficit therefore experiences slower productivity growth, slower increases in living standards and a trade deficit.

An economy that cannot offset a goods deficit with a surplus on invisibles, becomes dependent on capital inflows. We side with Rodrik (2007, p33), who quotes Prasad et al (2007) 'capital inflows appreciate the real exchange rate and hurt growth through reduced investment incentive in manufacturing'.

Historically income flows from UK overseas interests financed the trade deficit; this overseas investment created overseas employment; this made overseas economies relatively more efficient while leaving UK manufacturing relatively less competitive, facilitating its decline.

Those in higher income deciles enjoy their capital income streams, and may have jobs not dependent on international price competitiveness. We surmise that the UK financial sector enriches the City, but inflates asset prices and hoarded wealth. It induces the inequality chronicled by Piketty but not, in his work, attributed to exchange rate imbalances. As Harvey (Ibid, p.4) aptly notes: 'Encouraging business is not equivalent to encouraging social welfare.'

Countries such as the UK and USA with highly developed financial markets and international currencies, can run trade deficits for decades, all the while losing manufacturing competitiveness and social cohesion.

However, in the very long run, overvaluation is unsustainable for political and economic reasons. Politically, as inequality increases, democratic politics breaks down; economically, when those providing the capital inflows realise the economy is not growing fast enough to pay the required return on their investments, the flows will stop; the currency then falls. Hence Gagnon (2006) finds a significant correlation between a rising current account deficit to GDP ratio preceding deprecation: 'The current account balance/GDP ratio has a modest but statistically significant effect on the estimated probability of a large depreciation.'

The next sections flesh-out the argument and suggest the UK's ability to sustain overvaluation may be coming to an end.

5.1 Trade flows versus capital flows

Neoclassical theory predicted floating exchange rates would solve balance of payments constraint problems because it deemed that trade flows determine the supply and demand for currency. Money is neutral, merely oiling the cogs of trade. This may apply when an economy has a small financial sector and when it has capital controls. For example, this applied to Korea during its catch up with the west, so Nam & Kim (1999, p.264) correctly note:

> 'In Korea, however, controls over external capital transactions have been fairly extensive, rigorously matching demand with supply in such a way as to keep capital transactions largely accommodative. Thus, ignoring capital flows in the long-run analysis of exchange rate determination should not be too much of a problem for Korea.'

This emphatically does not apply to UK. As John Harvey shows, (Ibid, 2013. p11) in 2005 the average daily value of currency flows was $1.9trillion, enough to finance world trade forty times over. Exchange rate models[23] which ignore money, assume prices respond to 'fundamentals' (trade flows), so exchange rates move to return trade into balance. The fact that the UK has not had a positive trade balance since 1985 proves them wrong. Capital flows, which drive currency values, not only cause short term exchange rate volatility but they can be ongoing and thereby create long term path-dependent consequences for economies[24].

On 20/09/2017 Mark Carney's announcement that interest rates might rise, sent sterling back up to its immediate post-Brexit value, showing that expectations of interest rate movements cause capital flows to move rates, as per Lavoie 2014, Chapter 7. Trade flows had nothing to do with this.

[23] For example, those of Dornbush and Mundell Flemming,

[24] Mainstream economists acknowledge this in their models, see IMF 2013.

5.2 City Hegemony and Government Policy

A mixture of path-dependent economic, geographic and cultural factors has made the UK a magnet for incoming capital. The City of London as a world financial hub, a cosmopolitan culture, the primacy of the English language and the UK time zone, these legacies of Empire all conspire to attract capital flows.

Political stability and the multi-cultural nature of London provide an attractive environment for international millionaires whose incoming capital inflates sterling and property prices.[25]

Government policy adds to the magnetism. First, a monetarist inspired monetary policy, designed to suppress inflation, induces higher interest rates that boost sterling. Secondly, post 1997 [26], flows were inflated by the encouragement of foreign acquisition of UK assets; this has resulted in massive portfolio sales, with the City taking its fees.

FDI is the least damaging component of incoming capital. When it adds to productive investment in manufacturing, it increases the productivity of the UK economy thereby offsetting the impact it has in creating demand for sterling. Nevertheless, profits sent overseas adversely impact the balance of payments.

Finally, the international banks of the City, funnel money into the UK from tax havens, (Christensen, J. 2013 The Finance Curse) supporting sterling's overvaluation and contributing to asset inflation and City enrichment mentioned above. Christensen, on inflows, ventures that 'Overall, a net position of £0.5tn to £1tn seems plausible' (Christensen, email to author, 11 December 2017).

This unique cornucopia of attractors conspires to produce a large capital account surplus, sterling overvaluation and a trade deficit. [27]

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[25] A report for the Mayor of London from the LSE and the University of York, found overseas investors comprise 13.2% of **all** property transactions from 2014 to 2016, including one third of new build.

[26] The abolition of the national interest defence when the Competition Authority superseded the Monopolies and Mergers commission laid UK industry wide open to foreign takeovers.

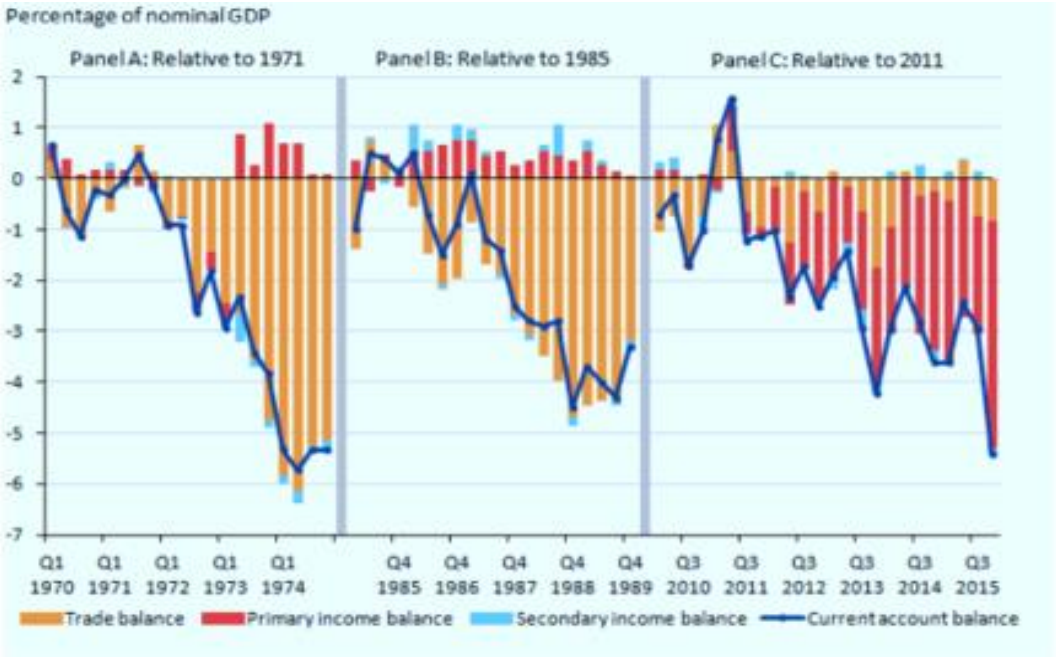
[27] It is within this context, that we should view the debate between chartists and fundamentalists as to what extent exchange rates move according to investors following trends or according to real economic indicators relating to the BOT.

5.3 Encouraging Appreciation

We saw above (Footnote 26) how post 1997 the government happily encouraged foreign acquisition of UK assets. When the UK's invisible surplus was no longer sufficient to support sterling the dependence on capital flows increased. After sterling's 22% ***appreciation*** in 1996, the UK sold off £6.5b of assets between 1997 and 2010, including ports, utility companies and even government buildings, see Brummer (2013). For an inauspicious precedent note Lavoie (2014, p.498): 'Argentina managed to keep a non-negative balance of payments by privatizing public companies and selling them off to foreign investors.'

After 2010 the net inflow of income from overseas investments turned negative (Figure 15).

Figure 15 UK Primary and Secondary Income Flows turn negative



Source: ONS Pink Book 2016 Figure 2: Contributions to the deterioration in the UK current account relative to selected calendar year, percentage of nominal GDP. Available at: https://www.ons.gov.uk/economy/nationalaccounts/balanceofpayments/bulletins/unitedkingdombalanceofpaymentsthepinkbook/2016 (Accessed 8th December 2017).

This decline, caused by rising net contributions to the EC and by UK overseas assets having been sold off, necessitates further sell-offs. Assuming the assets being sold achieve a return of about 3% p.a., each sale has a negative impact on

UK income. This is a vicious circle (spiral) par excellence. The rise in private debt induced by the balance of trade deficit caused by overvaluation which produces slow or stagnant GDP growth, will reach a tipping point when:

1) markets note that the UK is growing more slowly than its debt and will thus be unable to service it indefinitely.

2) There is a lack of profitable assets left to sell off.

This is not to invoke the bond vigilantes a la Krugman. As Modern Monetary Theorists correctly point out, an advanced economy with its own currency can monetise its debt and honour its cheques. But this is sustainable only for as long as foreigners choose to park the proceeds of their own undervaluation in the coffers of the trade deficit countries. China excels at this. 'It finances its trade surpluses by building up liquid dollar claims on foreigners – mainly in the form of official exchange reserves cumulating to US$3.8 trillion in early 2014', McKinnon and Schnabl (2014, p.12). When creditors decide the UK can no longer service the debt, they will withdraw.

Has a moment of truth arrived? In autumn 2017 unsecured credit card debt is on the rise. In October 2017 warning signs belatedly appeared: Bank of New York Mellon (Evans-Pritchard, A. 2017, p.1) has said sovereign wealth funds are at last getting wary of UK debt. When the rise in debt stops, economic growth will halt.

Meanwhile, if rising inequality and stagnant median incomes are politically acceptable, then sterling is neither undervalued or overvalued. Its value is just what it is, but, in the long run, it is unsustainable.

5.4 Symptoms of an Overvalued Currency

In addition to a trade deficit, we propose seven symptoms which evidence overvaluation:

1) Loss of world trade; disproportionate shrinking of manufacturing

Table 31 The UK's loss of world trade from 1950 to 2016.

	France	Italy	Germany	UK	USA	Japan	China
1950				10.7			
1970	6.15	4.49	8.52	7.28	15.60	5.79	0.60
1980	6.36	4.18	7.67	6.37	12.18	6.33	0.49
1990	6.15	5.00	9.37	5.72	12.80	7.40	1.32
1991	5.99	4.71	9.8	5.54	13.20	7.75	1.48
1993	5.59	4.43	8.59	5.20	13.35	8.15	1.34
2000	4.87	3.70	7.59	5.15	13.84	6.49	3.15
2010	3.65	2.84	7.65	3.64	9.81	4.42	8.37
2014	3.44	2.68	7.49	3.59	9.91	3.45	9.91
2016_Imp	3.53	2.49	6.50	3.92	13.88	3.74	
2016_EX	3.14	2.89	8.40	2.57	9.12	4.04	

Source: All rows except bottom two ONS: available at https://www.ons.gov.uk/economy/nationalaccounts/balanceofpayments/bulletins/uktrade/apr2016.*(ONS accessed: 20 September 2017)*

Bottom two rows Source WTO available at http://stat.wto.org/CountryProfile/WSDBCountryPFView.aspx?Language=E&Country=FR%2cDE%2cIT%2cJP%2cGB%2cUS *(accessed: 10 September 2017)*

The figures show clearly the relative decline of the UK's share of world exports compared to our competitors, particularly Germany whose share was roughly constant. Note the rise of China with its undervalued currency.

Table 32 highlights the UK decline between 1980 and 2011, while Tables 33 and 34, emphasise that the decline began in the 1870s as German manufacturing growth enabled it to close on the UK.

Table 32 UK Relative Decline of World Trade Merchandise 1980 – 2011

Country	1980		2011	
	Ranking	%age share	Ranking	%age share
UK	5	5.41	11	2.59
China	30	.89	1	10.4
France	4	3.64	6	3.27
Germany	2	9.48	3	8.06
Italy	7	3.84	8	2.87
Japan	3	6.41	4	4.51
Korea	32	0.86	7	3.04
Singapore	26		14	

Source: World Trade Report 2013 Factors Shaping the Future of World Trade, Extracted from Table B3 p. 60

Table 33 (Also appearing as Table 41)

UK Economic Growth Rate Declines after 1870

	1820-1870	1870-1913
France	1.27	1.60
Germany	2.01	2.83
Italy	1.24	1.94
Netherlands	1.70	2.16
UK	2.05	1.90
West European Average	1.71	2.14
USA	4.20	3.94

Source: Table A1-e, page 187, in The World Economy: A Millennial Perspective by Angus Maddison: Paris, OECD, 2001)

Table 34 **Relative Shares of World Manufacturing 1830 to 1913**

	1830	***1860***	***1880***	***1900***	***1913***
France	***5.2***	***7.9***	***7.8***	***6.8***	***6.1***
Germany	***3.5***	***4.9***	***8.5***	***13.2***	***14.8***
Italy	***2.3***	***2.5***	***2.5***	***2.5***	***2.4***
Russia	***5.6***	***7.0***	***7.6***	***8.8***	***8.2***
UK	***13.6***	***19.9***	***22.9***	***18.5***	***14.8***
USA	***2.4***	***7.2***	***14.7***	***23.6***	***32.0***

Source: Extracted from Bairoch (1982) Table 10, p294

Table 35 shows how between 1970 and 2015 western currency overvaluation wrought disproportionate losses of world trade and Table 36 correlates this with declining western growth.

Table 35

The Industrialised West has overvalued currencies

- Shares of World Trade in Percentages

Country	**1970**	**1985**	**2000**	**2015**
China	0.5	1.2	2.2	2.1
South Korea	0.2	0.5	2.7	3.2
UK	6.9	5.4	4.4	2.9
USA	15.2	11.7	12.3	9.3
The Industrialised West	73.4	68.3	62.9	59.1
The Emerging East	4.9	11.0	19..9	21.0

Source: Table 601A - Successive editions of International Financial Statistics Yearbook 1979, 2000, 2004 and 2015. Washington DC: IMF Various Years. 2006.Source for Columns 2 and 3, Mills (2012 p 33.) citing: IMF International Financial Statistics Yearbook 2011-page 67 plus country tables: Manufacturing figures from Earthtrends website

Table 36

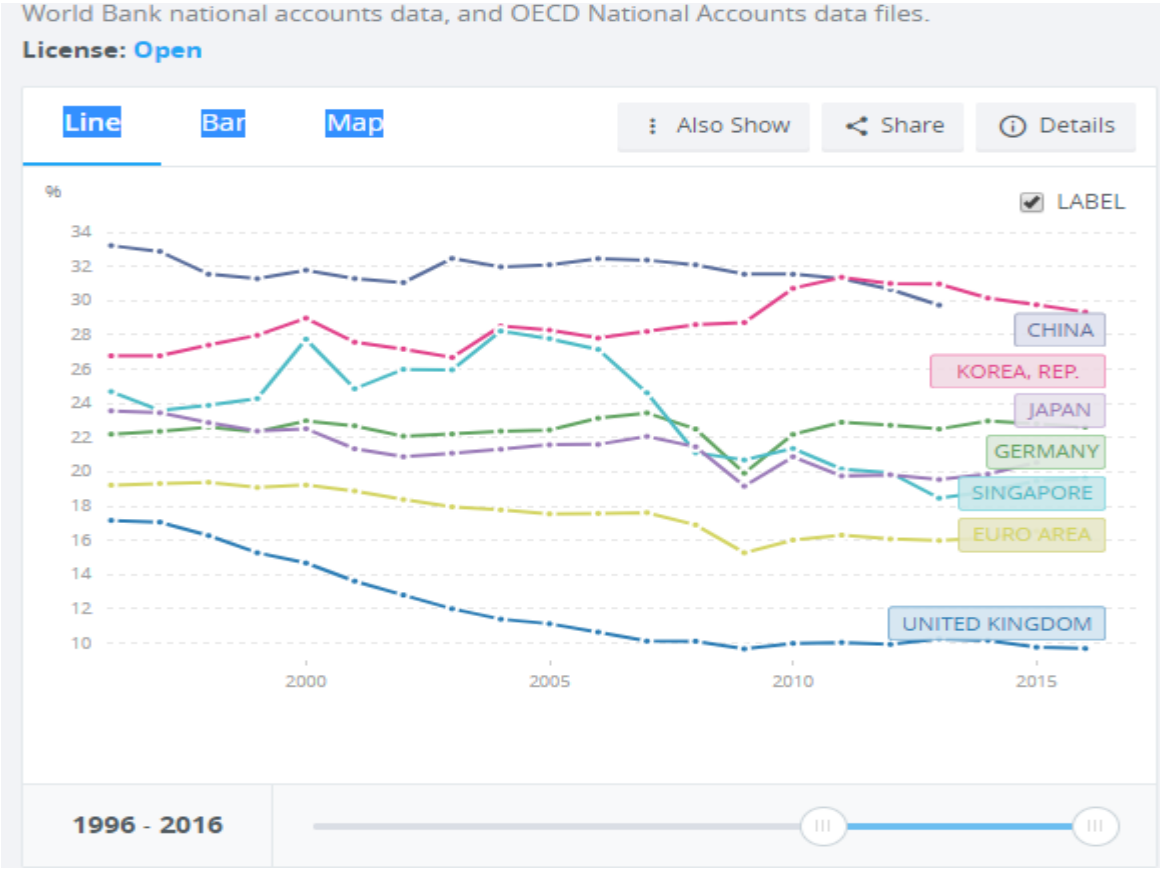
- Ratio Increase in the Size of the Economy

Country	**1970**	**1985**	**2000**	**2015**
China	100	290	915	3407
Singapore	100	320	1053	2135
South Korea	100	367	1109	1970
UK	100	134	200	253
USA	100	160	268	349
The Industrialised West	100	161	247	310
The Emerging East	100	176	397	1375

Source: Table 601B - *Successive editions of International Financial Statistics Yearbook 1979, 2000, 2004 and 2015. Washington DC: IMF Various Years.*

Figure 16 and Table 37 show the higher percentage of GDP devoted to manufacturing in the trade surplus countries, and the disproportionate shrinking of UK manufacturing, now merely 9.67% of GDP.

Figure 16 Manufacturing Value Added % of GDP 1996-2016



Source World Bank Open Data. Available at: https://data.worldbank.org/indicator/NV.IND.MANF.ZS

Table 37 Manufacturing Value Added % GDP

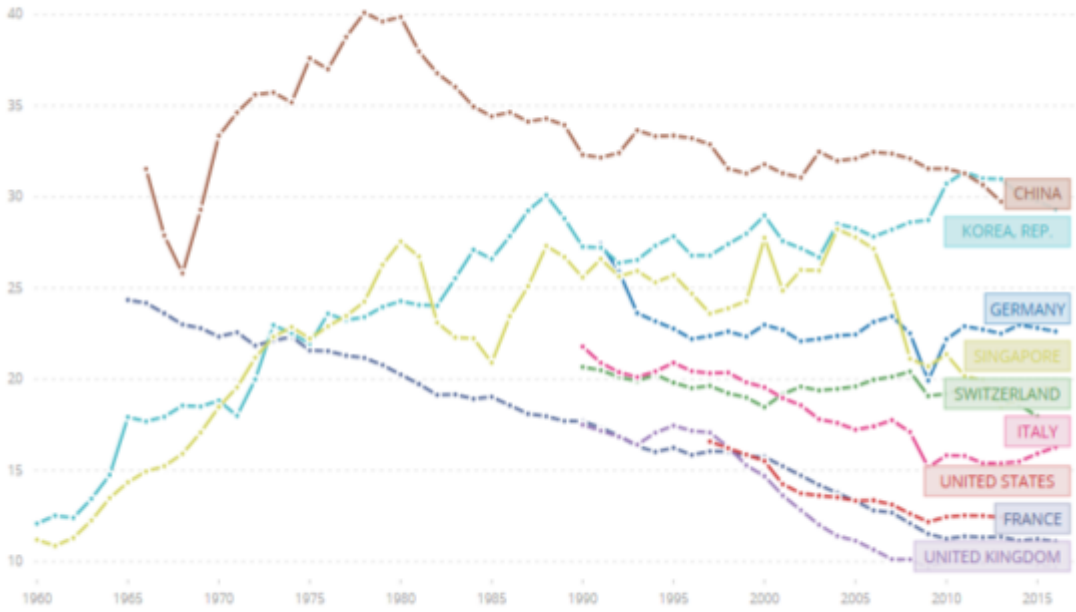
	1990	1996	2016	% age points change 1990 - 2016
China	32.3	32.2	29.7 (2013	-2.56
Korea	27.3	26.8	29.3	+2.07
Japan	25.5	23.6	20.6 (2015)	-4.91
Germany	27.4	22.5	22.6	-4.8
Singapore	25.6	24.6	19.6	-5.98
Euro area	21.96 (1991)	19.2	16.5	-5.44
UK	17.5	17.2	9.7	-7.8

Source: Taken from World Bank Open Data. Available at: https://data.worldbank.org/indicator/NV.IND.MANF.ZS

Inevitably, as productivity improvements in the manufacturing sector reduce its costs and therefore its monetary value, it shrinks as a proportion of GDP. But the long-term trends show deficit countries such as UK and USA suffer disproportionate losses in manufacturing. Rapidly growing and trade surplus countries have relatively larger manufacturing sectors. The UK's decline accelerates after 1996 as sterling began to appreciate again, (Figure 16).

Figure 17

Long term trends in Manufacturing GVA to GDP Ratios 1960 to 2016



Source World Bank Open Data: Manufacturing, value added (% of GDP) Available at: https://data.worldbank.org/indicator/NV.IND.MANF.ZS?locations=CN *(Accessed: 7th December 2017).*

2) Trade deficit

The UK's historical tendency to have a visible trade deficit is uncontentious, Table 38. There was improvement after the 1967 devaluation but also after the 1979 appreciation which decimated industry from 1979 to 1981. This induced the only ever surplus; this was due to North Sea oil and the compression of imports caused by recession.

Note the improvement after 1931, when sterling fell 24% overall and 31% against the dollar, and the Exchange Equalisation Account was instructed to keep it at that level. It shows the deterioration when sterling appreciated again in 1936/7.

Table 38

The UK's Long-Term Merchandise Trade Deficit 1889 -1990 in £m.

1889	-105								
1890	-86.3								
1891	-122.1		1901	-173.1		1911	-121.2	1921	-
1892	-128.9		1902	-178.4		1912	-143.8	1922	-183
1893	-124.6		1903	-181.3		1913	-131.6	1923	-210
1894	-131.5		1904	-179.1		1914	-	1924	-337
1895	126.5		1905	-155.9		1915	-	1925	-39
1896	137.9		1906	-146.0		1916	-	1926	-463
1897	-153.9		1907	-126.8		1917	-	1927	-386
1898	-168.9		1908	-135.6		1918	-	1928	-352
1899	--153.7		1909	-154.2		1919	-	1929	-382
1900	-167		1910	-142.7		1920	-386	1930	-386

1931	**-407**	1936	-346		1941	-		1946	-103
1932	**-286**	1937	-437		1942	-		1947	-361
1933	**-258**	1938	-388		1943	-		1948	-151
1934	**-284**	1939	-		1944	-		1949	-137
1935	**-275**	1940	-		1945	-		1950	-51
1951	-689	1961	-140		1971	+210		1981	**+3251**
1952	-279	1962	-100		1972	-742		1982	**+1911**
1953	-244	1963	-119		1973	-2568		1983	-1537
1954	-204	1964	-543		1974	-5233		1984	-5336
1955	-313	1965	-260		1975	-3257		1985	-3345
1956	+53	1966	-108		1976	-3961		1986	-9485
1957	-29	1967	-599		1977	-2322		1987	-11223
1958	+29	1968	-712		1978	-1592		1988	-21078
1959	-115	1969	-209		1979	-3342		1989	-23840
1960	-401	1970	-14		1980	**+1357**		1990	

Source: extracted from Tables 9.1, 9.2 and 9.4, Thirlwall and Gibson (1992, pp. 222-224, 226, 232-233) quoting sources: Data from 1951-5 from Mitchell and Deane (1962, p.142) from 1956 the UK. Balance of Payments, various editions HMSO.

Table 39, shows net lending and borrowing across the four sectors of the economy. The overall foreign deficit became even more severe between 2013 and 2015 at c. 5% of GDP. Because the four sectors must sum to zero, unless the household or corporate sectors greatly increase their borrowing, public sector debt will continue to mirror the BOT deficit. Austerity will shrink the economy, not the debt to GDP ratio. ONS figures illustrate this. UK PS net debt (including public sector banks) was 30.5% of GDP in 2003, lower than Germany. In 2013 it was 127% falling to 98.9% in 2015, ***but rising*** thereafter to 101% in 2016/7 (*Source:https://www.ons.gov.uk/economy/governmentpublicsectorandtaxes/publicsectorfinance/timeseries/ruto/pusf)*

Any slow-down in the rate of increase in government debt has only been made possible by massive net lending from abroad and, from 2016 to 2017, by falling household saving, involving a £30b switch from lending to borrowing.

Table 39

UK Net Lending (+) and Net Borrowing (-) by Sector in £bn

ONS Revised Figures 29th September 2017

	III.1 Capital account				
	Net lending (+) / borrowing (-) by sector				
	Corporations	Govt.	Household	ROW	Recon
2006	-21,695	-40,994	15,538	47,151	0
2007	-44,209	-44,433	30,131	58,516	5
2008	-25,321	-76,408	29,088	72,643	2
2009	18,267	-159,571	81,782	59,523	1
2010	4,142	-150,286	85,731	60,415	2
2011	23,469	-123,555	60,431	39,659	4
2012	3,703	-138,473	62,593	72,174	-3
2013	-46,345	-97,646	45,771	98,219	-1
2014	-36,558	-103,947	40,538	99,967	0
2015	-75,812	-80,959	56,648	100,123	0
2016	-65,038	-64,293	21,243	116,799	8,711

Source: ONS Net Lending by Sector revised 29/09/2017 (Recon= reconciliation)

Figures for 2017 show households switching to borrowing £12612 m., enabling government debt to fall to c. £37,104 but leaving the BOP deficit still at c. £95 bn. (Source: https://www.ons.gov.uk/economy/nationalaccounts/uksectoraccounts/datasets/unitedkingdomeconomicaccountsuktotaleconomy

3) BOP reliant on invisibles or capital account surplus

In the last three decades the surplus on invisibles has not covered the goods deficit, so the UK has relied increasingly on capital flows from asset disposal or sale of debt.

Schenk (2010) did not regard outgoing capital flows or incoming income streams as overly significant. Others disagreed as explained in Appendix 10.

The historical figures contained in Thirlwall and Gibson (Ibid,), Cairncross and Eichengreen (1983) and Schenk (1994) show how these income flows, (and in later years the windfall of North Sea oil receipts) balanced the books.

Ray's figures showing investment flows, Table 40, confirm that between 1899 and 1937 the percentage of UK exports consisting of invisible earnings never fell below 35% and from 1913 to 1937 fluctuated between 42% and 45%.

Table 40 UK Current balance of payments 1899 to 1963

Table 1

U.K. current balance of payments

£million, annual averages

	Imports	Exports	Invisibles			Current balance	Invisible balance in % of exports	
			Govt.	Other	Balance		Total	Ex Govt.
1899	449	343	—	—	159	53	35	—
1913	706	651	—	—	293	237	45	—
1928-29	1,096	851	20	340	360	103	42	40
1935-37	815	554	—3	251	248	13	45	45
1957-59	3,509	3,446	—201	469	268	238	8	14
1960-63	4,135	3,976	—343	494	151	—8	4	12

Source: Key Statistics, London & Cambridge Economic Service.

Source: (Table 1 in Ray 1966 p.4)

The UK's reliance on invisibles between 1899 and 1945 caused investment in manufacturing to lag that of our competitors, leading to the relative weakness of the manufacturing sector. In the 1880s the UK's productivity was already rising more slowly than that of Germany, (Table 41).

Table 41 (Table 33) Economic Growth: UK Falls behind after 1870

	1820-1870	1870-1913
France	1.27	1.6
Germany	2.01	2.83
Italy	1.24	1.94
Netherlands	1.70	2.16
UK	2.05	1.90
West European Average	1.71	2.14
USA	4.2	3.94

Source: (Abbreviated from Table 4.3 Schenk 1994 p. 97)

In the post war era, the UK went a long way to balancing the books by increasing visible exports, (Ray, G.F.1966, p4), but there ***was still a missing residual***, (Ibid, p4), and this persisted.

The size of capital flows leaving the UK for the Sterling Area and the Rest of the World, as a percentage of GDP, in the 1950s is shown in Table 42.

Table 42 Capital Flows Leaving the UK

ROW	1950	1951	1952	1953	1954	1955	1956	1957	1958
ROW	-114	33	19	40	39	54	51	-87	5
RSA + ROW	94	198	180	241	240	183	241	208	259
GDP £bn	11.5	12.8	13.9	15.1	15.9	17.1	18.5	19.6	20.4
% GDP	.8	1.5	1.3	1.6	1.5	1.1	1.3	1.1	1.3

Source: (Abbreviated from Tables 4.3 and 4.4 Schenk 1994, pp. 97-98)

We reject Shenk's sanguine attitude to these investment flows and side with A.C.L. Day who insisted they weakened UK manufacturing (Schenk 2010 p. 91. See Appendix 10). Dawnay (2001, p.3) encapsulates the argument:

> 'And the outflow of capital reduced Britain's productivity in the long run because of its unavailability for British industry, and contributed to a lengthy and slow decline in sterling's value'.

If, over the decades, there had been a net transfer from overseas to domestic investment there could have been a lower REER and greater profitability, creating a lower ICOR[28]. This could have promoted the virtuous spiral of export-led growth and a stable currency.

In the long run a dependency on overseas income streams becomes unsustainable, breaking down when they turn negative, illustrated in Figure 15, page 77.

[28] ICOR, is the Incremental Capital Output ratio; as already noted, the lower it is, the more efficient is capital.

We conclude that the UK's capital flow history is a damaging legacy of empire. Under the invisibles and capital account surplus criteria, sterling has been permanently overvalued.

4) Low Rate of Return in Manufacturing versus Competitors

From 1970 to the industrial cull of 1979-1981, the UK had lower rates of return on both equity and capital in the non-financial sector than other OECD countries, with an ongoing downward trend, (Table 43).

Longs periods of overvaluation reduce profitability of industry until eventually overvaluation destroys all but the strongest firms, as per the 1979-81 recession.

Table 43 Low UK ROR 1970–1979

Table 10. Rates of return to equity and rates of return on capital in non-financial corporate sector

Percentages

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
United States										
Rate of return to equity	12.1	12.3	13.7	16.0	3.8	1.5	12.5	13.9	14.3	14.7
Rate of return to capital[a]	15.2	15.4	16.1	15.8	2.8	3.1	14.2	14.9	14.6	13.3
Japan										
Rate of return to equity	14.5	9.9	11.1	12.4	2.1	7.5	6.6	9.2	8.5	9.8
Rate of return to capital	32.0	24.8	22.7	19.6	5.2	3.5	14.5	14.4	15.8	14.7
Germany										
Rate of return to equity	22.0	20.6	21.2	20.7	18.9	17.0	19.0	18.3	18.0	18.1
Rate of return to capital[a]	22.0	20.4	19.9	19.4	17.7	16.5	18.2	18.4	18.9	19.2
France										
Rate of return to equity	..	7.3	7.2	7.6	8.0	5.5	4.9	6.7	7.1	7.4
Rate of return to capital	..	14.6	14.7	14.2	12.2	9.4	7.9	9.2	9.3	9.6
United Kingdom										
Rate of return to equity	7.8	8.2	7.3	7.9	7.5	6.5	4.7	7.7	7.2	..
Rate of return to capital[b]	7.8	7.8	8.0	7.8	4.9	3.6	4.3	6.6	6.9	..

a) Net rate of return for Industry, transport and trade used as a proxy for the non-financial sector.

b) The coverage of these data is not exactly the same as those in Table 9.

Source: Hibbert (1983) and OECD National Accounts.

Source: Table 10 in Chan-Lee, J. & Sutch, H. 1985 p.159

Nevertheless, after the post 1979 appreciation, Lee and Sutch (1985, p. 161) noted that profits were lower than in the 1960s and 1970s. Table 44 shows the UK's relative inferiority from 1960 to 1982.

Table 44 Low ROR of UK Manufacturing 1960–1982

	UK	USA	Germany	France	Italy	Japan
1960s average	13.6	22.2	20.9	15.6	18.3	36.5
1970s average	8.1	16.8	15.7	16.0	15.3	26.4
1982	5.5	10.6	11.7	9.5	16.1	21.5
Figures show gross operating surplus as % of gross capital stock						

Source Table 1, Chan Lee, J.H. and Sutch, H. 1985 p.8

5) Low Manufacturing ROR versus other sectors.

From 1997 to 2016 gross and net returns for services were permanently much higher and less volatile than for manufacturing, indicating that tradable goods are more sensitive to world prices than services (Table 45).

Table 45 Manufacturing ROR much lower than other sectors.

Percentage

	All Private Non-Financial Corporations[2]		UKCS Companies[3]		UK non -CS PNFCs		Manufacturing Sector PNFCs		Service Sector PNFCs	
	Gross[4,6]	Net[5,6]	Gross[4,6]	Net[5,6]	Gross[4,6]	Net[5,6]	Gross[4,6]	Net[5,6]	Gross[4,6]	Net[5,6]
Year	LRWV	LRWW	LRXD	LRXE	LRXO	LRXP	LRYB	LRYC	LRYP	LRYQ
1997	13.4	14.2	11.1	10.6	13.6	14.5	12.7	13.7	17.0	18.4
1998	12.5	12.9	9.1	6.9	12.9	13.3	11.1	11.2	16.7	17.8
1999	11.7	11.4	10.6	10.5	11.8	11.5	10.4	9.9	15.1	15.1
2000	11.7	11.5	16.4	23.3	11.3	10.8	10.1	9.4	14.4	14.1
2001	10.5	9.6	15.8	22.9	10.1	8.9	8.3	6.7	12.9	11.8
2002	11.3	10.7	15.4	22.4	11.0	10.2	9.0	7.8	14.0	13.1
2003	11.4	11.3	15.2	23.0	11.2	10.8	8.4	7.1	14.8	14.9
2004	11.3	11.3	15.6	24.7	11.1	10.7	9.0	8.2	14.2	14.0
2005	11.6	11.8	19.5	34.4	11.1	10.9	8.9	8.1	14.3	14.5
2006	11.6	11.9	22.5	41.1	11.0	10.8	8.6	7.7	14.0	13.9
2007	11.3	11.4	21.1	37.8	10.7	10.5	8.2	7.1	13.7	13.5
2008	11.2	11.5	22.4	40.6	10.6	10.5	8.3	7.2	13.7	14.0
2009	10.5	10.3	17.3	28.6	10.1	9.6	6.9	4.8	14.1	14.4
2010	11.2	11.5	21.1	37.9	10.7	10.6	7.1	5.5	14.8	15.6
2011	11.3	11.7	24.5	44.3	10.6	10.6	8.5	8.0	14.3	14.9
2012	11.1	11.4	20.1	31.9	10.6	10.7	7.8	6.9	14.9	16.0
2013	11.1	11.5	18.0	25.6	10.8	11.0	8.6	8.3	15.1	16.3
2014	12.0	12.9	12.5	13.2	12.0	12.8	10.5	11.9	17.0	19.2
2015	12.1	12.9	7.6	3.6	12.3	13.3	9.9	10.7	18.2	21.0
2016	11.8	12.6	6.8	2.4	12.0	13.0	10.9	12.8	16.8	18.9

Source: ONS Statistical Bulletin: Profitability of UK companies for Quarter 2: April to June; Released 22 November 2017. Available at: https://www.ons.gov.uk/economy/nationalaccounts/uksectoraccounts/bulletins/profitabilityofukcompanies/apriltojune2017 *(Accessed 8th December 2017).*

The above ONS bulletin notes the upturn in manufacturing profitability following the 2016 devaluation.

6) Low and falling capital investment.

Investment depends on the expectation of profitability, which is reduced by overvaluation. The UK has consistently failed to invest, especially following the GFC, ***before*** Brexit (Table 46). Figure 18 plots the long-term trend with the UK the laggard.

The figures flatter to deceive. The ongoing replacement rate for UK capital is about 12%, so net new capital formation is below 4% (15.9% less 12%) This includes capital outlay on long term infrastructure which has low returns. Given a population increase of about 500,000 per year, there is virtually no new net investment per capita. Light industry, where a high SRoI is achievable, invests little when potential profits are non-existent due to the high UK cost base. What growth the UK is achieving, is through population growth, a reduction in household saving and increased foreign lending, witnessed in Table 39, page 85.

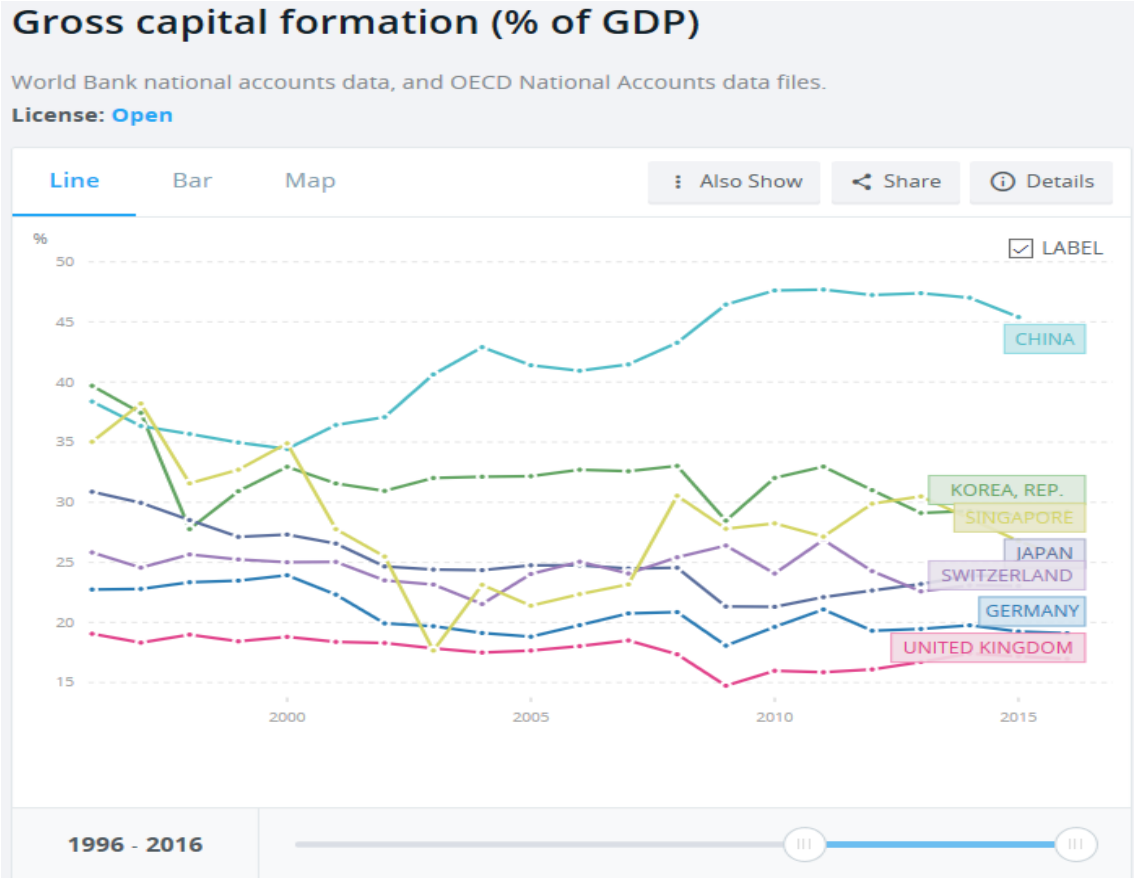
Table 46

Gross Fixed Capital Formation % of GDP

Country Name	1996	2001	2006	2011
China	38.4	36.4	40.9	47.7
Central Europe and the Baltics	24.6	24.4	26.4	23.7
Switzerland	25.8	25.0	25.0	26.9
Czech Republic	35.7	31.6	30.1	27.0
Germany	22.7	22.3	19.8	21.1
Euro area	21.5	22.9	23.2	21.5
United Kingdom	19.1	18.4	18.0	15.9
Japan	30.9	26.6	24.7	22.1
Korea, Rep.	39.7	31.6	32.7	33.0
OECD members	23.1	22.8	23.6	21.1
Singapore	35.0	27.8	22.3	27.1

Source: World Bank Open Data; National Accounts data and OECD National Accounts data files

Figure 18 UK: Lowest Level of Gross Capital Formation



Source: World Bank Open Data; National Accounts data and OECD National Accounts data files

World bank figures (Table 47) confirm that post GFC UK investment at c. 16% is below the already low Euro area average of c. 20%, with per capita investment reduced by population increases of c. 500,000 p.a.); China, desperate to prop up demand after 2009, may have over invested.

Table 47

Post 2014 Low capital investment

Gross Fixed Capital, Nominal, Percent of GDP

	2014	2015	2016
China	44.82	43.35	-
France	21.34	21.57	21.96
Germany	20.01	19.91	19.98
Italy	16.64	16.31	17.00
Japan	23.93	23.44	23.15
Euro Area	19.63	19.76	20.13
UK	**16.6**	**16.93**	**16.66**
Switzerland	23.3	23.39	24.28

Source: World Bank Open Data, 2017 http://www.principalglobalindicators.org/regular.aspx?key=60942007 Accessed:21 September 2017

The UK's growth figures (Table 48) conceal near stagnant growth per capita, caused by low investment, especially in manufacturing:

Table 48

Post 2014: Low Growth in Advanced Economies

	2014	2015	2016
France	*0.095*	*1.07*	*1.19*
Germany	*1.93*	*1.75*	*1.94*
Italy	*0.11*	*0.78*	*0.38*
Japan	*0.34*	*1.11*	*1.03*
UK	*3.07*	*2.19*	*1.31*
Switzerland	*2.45*	*1.23*	*1.38*

Source: IMF Data – Real Sector by Indicator. Available at:
http://www.principalglobalindicators.org/regular.aspx?key=60942007 Accessed: 21/09/2017

Why has investment stalled? We side with Post-Keynesian observation, as expressed by Harvey (2009, p.7) that 'S (savings) does not represent the stock of loanable funds; the latter is a multiple of the former because bank loans create money'. Net UK investment per capita is close to zero because investment does not depend on savings but on the willingness of banks to lend. As Harvey notes (2010 p. 69) 'investment (I) is a function of interest rates and the expected rate of profit from investment.' He realises (Ibid, p.7) that interest rates 'do not affect

savings and have only a secondary effect on investment, the primary driver of which is the expectation of profit from investment'.

Following the GFC official interest rates have been low, but real interest rates for businesses wishing to invest have not. ***With overvaluation industry is unprofitable[29].*** These two facts together ensure that very little productive net investment takes place.

7) Income elasticity of demand for imports higher than for exports.

This was explained in Chapters 2.66 and 3.4.

8) Financial Sector inhibiting Manufacturing.

Arguably, as chronicled by Mills, (2017, pp. 25-27), by Jackson, A. and Dyson, B. (2012, pp. 42-43), and Dawnay (2001), sterling has been overvalued since 1711 when John Lock insisted the King drive silver back up to 20 shillings to the guinea. As Newton predicted, this caused deflation and hampered business. Nevertheless in 1711, Newton, as Master of the Mint, fixed sterling to the Gold Standard at £3 17sh 6d per ounce. The result was widespread hardship. To the detriment of the UK, this value was held in place until 1932, with exceptions due to the Napoleon Wars (1797 to 1819) and First World War (1914 to 1925). Both wars required extra money and drove up inflation, yet in 1810 the Banking School lost to the Currency School, and sterling was returned to the Gold Standard at the 1797 parity. The ensuing poverty induced events that culminated in the Peterloo Massacre of 1821. In 1925 Churchill ignored Keynes and accepted the Cunliffe Committee's recommendation to restore sterling to its pre-war value. This made sterling 10% overvalued precipitating the austerity of the 1920s and consequent General Strike. The City remained the financial hub of a sterling empire protecting overvaluation.[30]

Since the 1880s, competitor nations, starting with Germany, built up their domestic industries (Tables 32 to 34). The German Banking Model was designed to enable Germany to catch up: finance served industry. It established a culture

[29] Light industry, unprotected by brand and acquired 'learned-by-doing' expertise, is particularly price-sensitive.

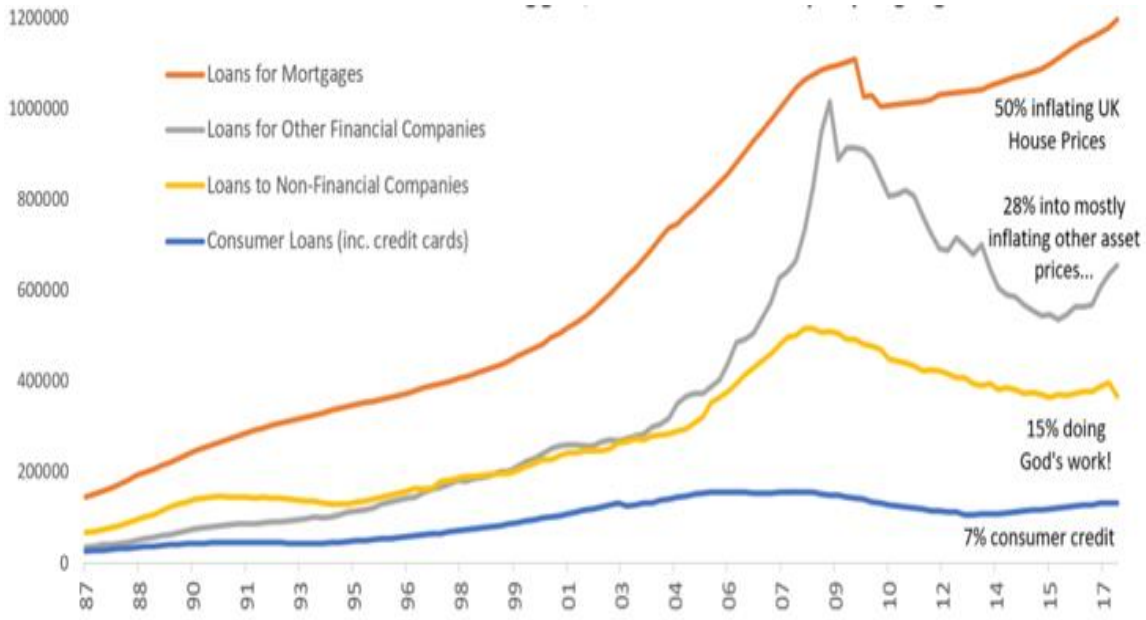
[30] Mills, an Oxford PPE graduate c. 1961, notes that none of his fellow graduates went into industry.

of manufacturing expertise to rival and then exceed that of the UK. The century old ascendancy of finance over industry, of accumulated wealth trumping wealth creation, is the City's poisoned chalice to UK industry and, by facilitating illicit capital flows from under-developed economies to the UK, to the world's poor.

As other countries have industrialised the UK's share of world trade has inevitably declined but the ***relative decline*** compared to its OECD competitors is apparent as seen in Tables 34 to 36. The money and prestige are in the professions and the financial sector[31]. The best human capital thus flows to these sectors which are less exposed to international trade and have higher returns.

Today Investment flows to real estate, financial companies and consumer credit, which account for over 80% of UK bank lending, with only 15% going to non-financial businesses, see Figure 19.

Figure 19 UK Bank Lending 1987 to 2017



Source: Symthe, E. Positive Money, 2017

Industrial investment goes overseas and UK blue-collar jobs decline, leading to deindustrialisation and inequality.

[31] This may contribute to the poor decision making in the manufacturing sector which produced the litany of strategic mistakes made by UK industry, chronicled exhaustively by Comfort (2012). The increases in productivity achieved by learning through doing, associated with endogenous growth theory, will be relatively lower in UK industry

When monetary policy tightens to defend an overvalued currency, it increases industry's borrowing costs and therefore its investment costs, reinforcing the lack of investment induced by overvaluation, described above under Symptom 6, page 90.

Supply-siders retort that government should counter this by improving management and technical skills training. However, 'alpha graduates' trained for industry will gravitate to finance when the latter is better paid.

It is true that when BMW, Honda and Nissan invested in the UK they created a profitable automobile industry without currency depreciation. But, autos are medium to high-tech manufacturing and the learning-by-doing and high levels of management expertise (including 'just-in-time' production) were acquired over decades not in the UK but in Germany and Japan, where competitive currencies allowed talent to be financially rewarded in the manufacturing sector. The UK neglects indigenous training and imports know-how 'off the shelf' without having funded it, espousing a free-rider economic model.

The low prestige and low profitability of manufacturing are part of the imperial cultural hysteresis, of which currency overvaluation is the crown of thorns.

6 Policy Prescriptions and Macroeconomic Conclusions.

Broad Aim: To end the BPC by making manufacturing profitable, thereby inducing increased investment in the real economy sourced both from retained earnings and bank lending.

Specific Aims:

1. Reduce the marginal propensity to import and shed the BPC.
2. Raise growth to c. 4% p.a. through a sustainable combination of wage- led and export-led demand.
3. Increase manufacturing from 9.7% to c.15% of GDP.
4. Raise gross investment from 16% to 21% of GDP. (Germany 20%)

In 2016 UK exports of semi-finished and finished manufactured goods (ONS codes BOPO and BPP respectively[32]) were £242.5 bn. As the benefits of a lower pound came through, the first three quarters of 2017 saw an aggregate increase of 12.1% (£178,351m to £199,985m)[33]. Extending this 12.1% increase to the whole year produces manufacturing exports of c. £271.8 bn. These exports contain roughly one third imported inputs (ONS, Economic Review, March 2014).

The UK does not need to have as large a manufacturing sector as Germany (22% GDP) because of the surplus on services. With UK GDP at c. £1.9tn, if manufacturing rose from 9.7% to 15% of GDP, it would increase from c. £188,145m to £290,945m *(by c. 55%).* ***If*** exports increased in line with manufacturing they would rise by c. £149bn. The UK BOT would improve by £99 bn, (2/3 of £149bn.) addressing the trade deficit and BPC. If the import content of exports were 40%, the BOT would still improve by c. £89 bn. ceteris paribus.

The deindustrialisation of the west indicates that when cost differentials are substantial, industry re-locates. The nonlinearity argument made earlier implies that the first policy task is to calculate the cost base differential. The devaluation must bring the potential cost of producing medium and low-tech manufactures in the UK into line with world prices. When this cost-base tipping point is reached, the higher price elasticities cited in Chapter 2.6.4 will re-emerge.

6.1 Calculating Level of Devaluation.

1. As a guide we take China, which, when £1= US$1.3 can produce light manufactures 32% cheaper ex-works than would be possible in the UK, (JML Limited (email to author, 4 September 2017 15:01).

[32] (£78,164m plus £164,349m) respectively. Source: https://www.ons.gov.uk/economy/nationalaccounts/balanceofpayments/timeseries/bopo/pnbp and https://www.ons.gov.uk/economy/nationalaccounts/balanceofpayments/timeseries/bopp/pnbp)

[33] The first three quarters of 2017 *showed a 12% increase in BOPO (£57,761m to £64,984m) and an increase in BPP of 11.9% (£120,590m to £135,001m).*

2. Add average shipping costs plus import tariffs of c. 10% (7% freight + av. 2.2% EU tariffs) so a UK good costing 100p, faces a Chinese good of 75p, **25%** cheaper (68p, plus transport to UK 6.8p (10% cost including transport) = 75p).
3. Differential = 25%.
4. Assume that to get agents to repatriate, domestic production needs to be cheaper still: add 3%.
5. To repatriate production of light manufactures from China to the UK requires a 28% reduction in the REER, as only then would price elasticity for these products shift from zero.

6.2 Closing Trade Deficit

We now use the evidence on price elasticities to calculate whether a 28% devaluation would close the trade deficit. The elasticities cited varied from 1 to 3. Despite the devaluation passing the tipping point, we assume a conservative 1% for exports and imports.

We assume, in line with studies such as Nam King, (2009, p.51), that exports start to respond to relative price changes after one year, and allow three years for full effects to occur.

1. A 1% devaluation keeps imports the same (1% fall in volume offset by a 1% price increase).
2. Exports increase by 1% (price constant, with 1% increase in volume)
3. This improves the BOP by 1%. However, ERPT is incomplete, with overseas exporters and distributors lowering prices while exporters in the UK raise prices; assume that this reduces the effect on the BOT by one third.
4. With a current account deficit of 5% of GDP and exports as 32% of the economy, the devaluation required to achieve balanced trade is 5%/32% times3/2/100times 100 = 23.4%.
5. This is insufficient to close the cost base differential so we revert to the 28%. After the three-year lag this would therefore produce an overall trade surplus. The Government could thus allow slightly faster growth

which would allow greater consumption and bring the surplus back to zero.

6. The economy rebalances away from services and the financial sector towards manufacturing.
7. If overall net lending to industry is not financed through new borrowing the increase in investment requires a shift from consumption, which would, ceteris paribus, lower living standards. However, our post-Keynesian insight on investment rejects the loanable funds model. The new investment for manufacturing can start from fresh lending/borrowing, ex nihilo, which will serendipitously help to repress sterling and, unlike current UK lending which helps to inflate asset prices, will not be inflationary as it will flow into real production[34]. Without a balance of payments constraint export demand will supplement domestic demand raising growth above the historical trend rate of 2.5% to c. 4%.

These are broad brush aggregate figures. Costs vary depending on how a product is brought to market. Some goods have long production runs, are relatively homogenous and are suited to container shipping. Smaller lighter goods with higher value added are suited for air freight, especially if faster delivery is required. Less homogenous goods, with relatively low capital intensity and shorter production runs are better first candidates for repatriation, ceteris paribus. For these a lower devaluation would suffice. The UK has a large trade deficit with the Eurozone which has a much ***higher*** cost base than China but some of this trade involves integrated supply chains which are not quickly disrupted. There are other countries from whom we import, Vietnam for example, which have ***lower*** cost bases than China.

Many factors come in to play, but it seems reasonable to assume that if the UK can match the cost base for a swathe of Chinese light manufacturers, UK manufacturing will be competitive.

[34] For calculations on national account aggregates following devaluation see Mills, (2014, pp. 14-15).

6.3 Implementation

Assuming that agents' expectations drive capital flows, (Harvey 2010 and Lavoie 2014) and that these support sterling, the government's statement of intent and its policy change must be bold enough to alter agent behaviour.

The government should implement the following policies

1) It declares that sterling is overvalued, clearly signalling that it does not wish the UK to have a surplus on the capital account, thereby signalling the end of an era.
2) It intervenes in the currency market, selling sterling as necessary.
3) If market interest rates tend to rise, it runs a tighter fiscal policy and uses the Bank of England's prudential levers to enable it to run lower interest rates without risking inflation.
4) It inhibits foreign purchase of UK companies and UK property. One measure should be to reintroduce the National Interest Defence present in the Monopolies and Mergers Commission until 1999.
5) It addresses the City's role in attracting illicit capital into UK tax havens, as this arguably sustains overvaluation, while concomitant tax avoidance contributes to the UK government deficit.
6) It could create a sovereign wealth fund to accumulate foreign assets.[35]
7) It ensures investment goes to those parts of the economy capable of rapid growth, to help bolster consumption despite the ratio of investment to consumption increasing.

6.4 Offsetting inflation

The leading sector inflation of a growing economy combined with a more progressive tax regime, would make an inflation target of c. 3% acceptable.

As seen in Chapter 3.6 on ERPT, if the import content of the CPI is 35%, a 28% depreciation increases potential CPI inflation by 9.8% (28% of 35%), but margin cutting lowers this. If foreign suppliers and domestic distributors absorb one third of the hike, Broad ERPT reduces the figure to 6.5%. Is this realistic?

[35] See appendix 11.

Gagnon's estimate for Broad ERPT in twenty industrial countries was .23, meaning 1% devaluation adds .23% to inflation. However, for the UK it was *a* ***negative*** *.11*. The latest OBR prediction is that despite rising commodity prices inflation will peak at 3.1% following the 15% post Brexit devaluation. Assuming inflation would have been c.1.5% without devaluation this means that a 1% devaluation causes .1% (1.5%/15%) inflation, meaning a 28% devaluation produces an extra 2.8% rather than an extra 6.5% inflation.

Theory and empirical evidence therefore indicate a figure closer to 2.8% than 6.5%.

Appropriate monetary and fiscal measures can reduce this further. The government should implement:

1. a cut in VAT on selected goods.
2. a cut in National Insurance, offset by an increase in income tax on very high earners.
3. a wealth tax and Land Value Tax, to reduce asset price inflation including housing costs which can account for up to 50% of spending for those on median incomes.
4. a council-house building programme and controls on mortgage lending.

The above measures only have to reduce a potential and temporary 4.3% inflation rate (1.5% plus 2.8%, or at the unlikely higher end 8% (1.5% plus 6.5%). down to the target 3%. After twelve months when the inflationary effect of increased import prices has passed through, the CPI is left with the residual 'healthy' leading sector inflation.

If industrial capacity is lacking, extra supply-side policies must ensure investment is forthcoming; progressive tax changes can absorb any excess demand and protect those on median incomes and below from falling real wages until the economy rebalances. A National Investment Bank should lend to businesses and to house builders, which will increase production and be disinflationary. QE for production should be considered, as opposed to existing QE that supports creditors and share values, and has little effect on production.

Increased investment and greater productivity from new factories and longer production runs in existing plant reduce inflation further. Devaluation lowers the marginal propensity to import thereby removing the BPC. Demand rises and wage growth exceeds inflation.

Finally, if, despite all these measures, real wages fall, the government should use progressive taxation to alleviate the effect on those in the lower income deciles.

6.5 Steadying nerves.

A temporary increase in debt caused by increased government borrowing will ensure that the markets do not reinvest in sterling. The government must make clear that this is intended but emphasise that it is not running a loose fiscal policy in the medium term. This, together with measures to tackle multi-national tax evasion[36] should calm the markets.

6.6 Macroeconomic Conclusions

1) Government debt, private debt and exchange rate imbalances

Exchange rate imbalances are exacerbated when advanced economies abandon exchange rate policy and allow portfolio flows to dominate the currency exchanges, while successful economies pursue some form of financial repression, combined with industrial policy and undervalued exchange rates.

Overvaluation reduces demand thereby exacerbating the need for private and public debt. Any economic model that fails to include an exchange rate variable is theoretically compromised. Post GFC credit no longer sufficiently supplements demand in advanced economies with overvalued currencies; inevitably, global unemployment has increased from 6.9% in 2005, to 8.5% in 2011 and was still 6.2% in 2016 (*ILO's Trends Econometric Models, November 2016).*

2) Devaluation and living standards

Headline statistics on growth and average wages after devaluation can mislead.

[36] The Tax Justice Network has the policies to do this.

First, if per capita growth is measured in a common currency, e.g. US$, then devaluation lowers this nominal figure. However, people do not shop in dollars: the lower nominal GDP does not reflect a commensurate fall in living standards.

Secondly, the real wage does not adequately measure overall living standards as it is the ***mean wage of those in work.*** The rising Gini coefficients in the neoliberal trickle-down era, skew the mean wage upwards, widening the gap between mean and median GDP per head.

If unemployment rises affecting disproportionately those on lower incomes, then the mean wage can rise. Conversely, if unemployment falls following devaluation, and the new jobs are skewed to lower incomes, ***the mean wage can fall.*** Hence some of our post-devaluation figures showed a temporary fall in the real wage. But, as the unemployed get jobs, provided wage income exceeds benefits, they are better off. Overall, living standards for the majority must rise when the economy grows, holding the population constant.

3) Devaluation: a necessary but not sufficient condition

In the current neoliberal framework, floating exchange rates do not address trade deficits. Financial flows and asset sell-offs prop up sterling while new net investment stagnates. Inflated land/ property prices add to industrial costs.

Devaluation will not remove the BPC if companies fail to invest, satisfice, or just use profits for equity buy outs. The UK financial culture attracts the most driven human capital to engage in creating financial rather than industrial products. The ultra-low interest rates substituting for wage demand in economies with overvalued currencies induce debt dependency. Overvaluation makes domestic investment unprofitable which, coupled with the burden of debt, drives up real interest rates. Tax treatment arguably favours debt rather than equity, and capital gains rather than investment.

We have argued economic growth is path-dependent and outlined policies required for a successful UK devaluation.

When the cost base remains too high after an insufficiently deep devaluation, inflation is higher than that which would follow a deeper devaluation. Moreover, devaluation fails unless agents realise the devaluation is intended. A CBI report

quoted in the Guardian (20th May 2017) illustrates this point: ‘They are also concerned that sterling could rise, wiping out the benefit for exporters’.

We referred to Mark Carney’s remarks this autumn that interest rates may rise caused sterling to appreciate. This illustrates two crucial points:

1) the folly of having no exchange rate policy.
2) financial flows, not trade flows, dominate sterling’s value, so capital flows and inward portfolio acquisition must be tamed.

Throughout its history, with the brief exception of the 1931 to 1936 interlude, sterling has been overvalued. The City of London and financial hegemony have drawn capital flows to the UK, ‘inflating’ sterling and reducing investment in the real economy. Unwanted, shallow and late devaluations have left the UK with a lack of manufacturing capacity. We have seen that the low ROR of UK manufacturing in the 1960s persists to this day. Even if its productivity were higher, the sector is too small to bring overall UK productivity into line with its competitors. Eurostat figures for the current replacement costs of capital are stark: dividing the value of total manufacturing capital by head of the population, reveals a ratio of 7400 euros per person in Germany in 1997, rising by 27% to 9469 per person in 2015; for the UK it is 4921 euros rising by merely 8.4% to 5333 per person (*authors’ calculations from Eurostat assets per industry, and UN population statistics*). Should the UK continue living beyond its means by selling off assets while productivity stagnates?

We surmise devaluation is resisted by the mutual self-interest of a rentier banking sector, the creditor class and wealth holders as opposed to wealth creators, who invariably recommend internal as opposed to external devaluation. We saw that the former creates a deflationary bias, while the latter forces the banks and asset holders to cut their losses. Economic policy is shaped by power and politics.

An economy is like a milking stool. It requires three legs to stand: fiscal policy, monetary policy and exchange rate policy. Advanced western economies have ignored the exchange rate: deindustrialisation, stagnation and social fragmentation are the result. The government must signal a deep enough devaluation coupled with appropriate supply-side policies to shift UK economic

culture away from the rentier economy towards manufacturing. Only this will halt sterling's long-term decline.

6.7 Further Work

In line with the view that mono-causal explanations are flawed, we surmise that low labour share, financialisation and the City of London, globalisation and exchange rate imbalances are intrinsically linked. There must be a shift in the *UK's economic and political culture. Real production and corresponding wage* demand must drive growth. Money creation for property and existing assets must be curbed. Unpayable debt must be written down and tax avoidance and evasion halted. Should the private banking sector retain control of money creation? Further research, including multi-sectoral analysis, should seek to integrate these issues (see Appendix 12).

Circa 21700 words

7 Appendices

Appendix 1

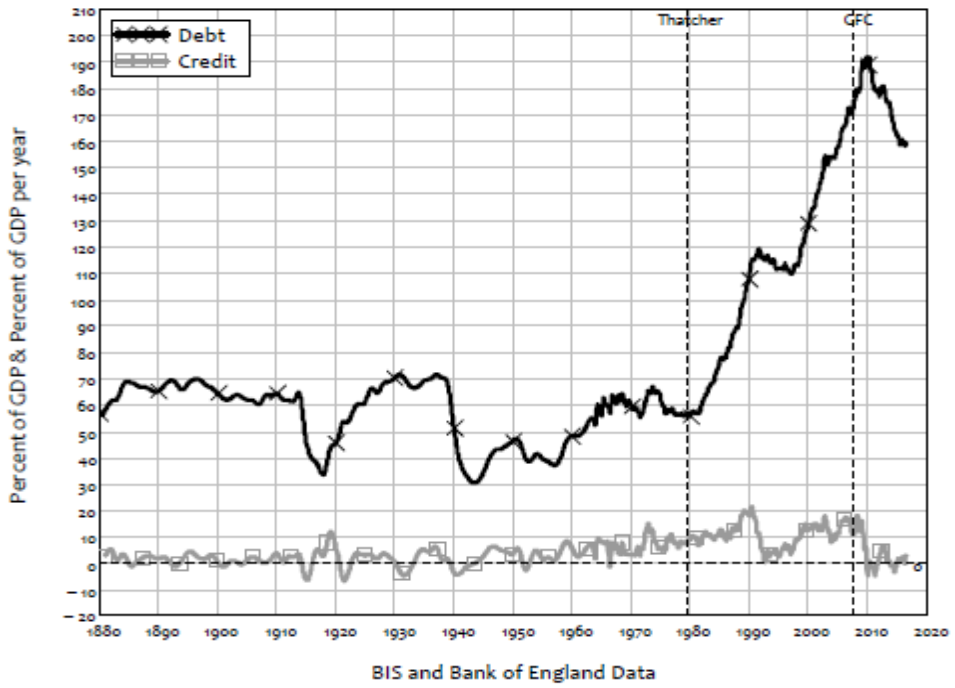
Table 1 Rising private debt: M4 as a percentage of GDP 1982-2016

1981	41.6	1991	86.7	2001	107.0	2011	145.0
1982	45.8	1992	86.2	2002	112.2	2012	137.7
1983	48.5	1993	84.6	2003	116.3	2013	128.2
1984	53.3	1994	84.0	2004	124.4	2014	118.6
1985	56.6	1995	86.5	2005	130.0	2015	115.7
1986	63.5	1996	88.1	2006	141.2	2016	116.4
1987	68.0	1997	90.0	2007	154.0		
1988	75.5	1998	92.2	2008	175.2		
1989	82.8	1999	96.5	**2009**	**177.9**		
1990	86.6	2000	102.4	2010	154.6		

Source: Bank of England, Millennium of data.
http://www.bankofengland.co.uk/research/Documents/datasets/millenniumofdata_v3_final.xlsx (Accessed: 24 August 2017)

Figure 1 (Figure 16 in Keen 2017, p.93)

Figure 16: UK Private Debt since 1880



Appendix 2 Devaluation: Conflicting studies cited by Thirlwall and Gibson

Thirlwall &Gibson argue that devaluation causes inflation and cite studies that support their claim, which are referred to below. However, Appendix 4 shows they also cite research supporting the contention that devaluation reduced the UK trade deficit.

Devaluation Causes Inflation

1) On page 173 they quote Harrod (1967b) '*devaluation is the most potent known instrument of domestic price inflation … may counteract any relative price advantage conferred*.' They acknowledge that Friedman predicted floating exchange rates would correct current account imbalances but note his reservation: Friedman (1953*) '… the inflationary repercussions of exchange rate depreciation ….'*

2) London Business School *'… domestic prices will ultimately rise by the extent of the devaluation.'*

3) To consolidate their case they refer to Ball, Burns and Laury (1977) LBS, explaining that they have three models *'each of which predicts that, with free collective bargaining, wages and prices are likely to rise eventually by the full extent of the devaluation.'*

4) They quote Meade (1951) *'it would be useless to turn to the mechanism of variable exchange rates unless there is sufficient flexibility of real wage rates.'*

Appendix 3 The Non-Price Factors that determine demand for exports

Part A summarises the conclusion of detailed studies on non-price factors which have been hypothesised to determine demand for exports. We have divided them into eight categories, and noted the conclusions of the studies. Part B is a more detailed review of these studies.

Part A

The non-price factors can be divided into eight categories listed below together with the conclusions of the studies.

(i) &(ii) The market share and geographical argument, that the UK was trying to sell products for which demand was weak, or selling into geographical areas that had weak demand, was disproved. The UK, by and large, was trying to sell the right type of products to the right markets but was doing badly in these markets, so the market share or shift share option was rejected (Panic & Seward (1966); Barma (1963); Panic & Rajan (1979). Major (1968) for 1954-1956, attributes a mere 7.8% of the decline to market share).

(iii) Poor Products. Studies (details?) found the UK suffered from poor quality products or unavailable products, and was inflexible on specifications.

(iv) & (v) Marketing was poor, delivery was unreliable and or slow. After sales service was also poor, (NEDO 1990).

(vi) & (vii) Industry suffered a slow growth of productive capacity due to a low share of GDP invested in productive capacity and R&D. Unit labour costs were irrelevant., (Fagerberg).

(viii) Bad Management was found in five industrial sectors (NEDC 1990).

Part B More detailed review of the findings of research cited by Thirlwall & Gibson on the Non-Price Factors which caused the relative decline of UK industry.

1) **Fagerberg**

Fagerberg (1988) looked at fifteen major industrial countries from 1960 – 1983 in which export shares were made a function of: **Continued over...**

Appendix 3 Part B cont …

1) Relative unit labour costs.
2) Growth of world trade.
3) Investment output ratio.
4) Growth of level of technology (measured by R&D and Patents).

He finds that for the UK and most other countries changing unit labour costs had negligible effects on economic performance. The loss of the UK's market share was due to the slow growth of productive capacity caused by the low share of national resources devoted to investment. So Fagerberg attributes UK failure neither to price nor non-price factors but to lack of investment in productive capacity and lack of R&D (vi) and (vii).

2) Market Share

The market share argument is that the UK was producing products for slow growing markets in which world demand was weak whereas UK competitors were selling into expanding markets. This is also referred to as the unfavourable commodity structure argument.

a) Panic and Seward

Complementing Fagerberg, the Panic and Seward (59-64) studies referred to on page 313 examine whether the following two non-price factors have caused the UK's long running balance of payments constraint and concomitant slow growth rate:

1) Unfavourable market share.
2) Poor quality product.

They *dismissed* this view because the UK's export share with both expanding and declining markets was found to be the same as for other countries. Furthermore, when the UK joined the Common Market it was trading with a rapidly expanding market, yet its growth rate in this market was still below par vis a vis its competitors.

Appendix 3 Part B continued over…

Appendix 3 Part B continued

b) Barma (1963) likewise found that the UK experienced ‘a slower increase in sales of both fast and slow growing products’.

c) Panic and Rajan (1979) did an international comparison of the structure of trade (55-73) and found that the UK’s disadvantage v France, West Germany and Japan did not lie in the broad product structure of her exports but in poor relative performance in all markets (p. 313).

d) Major (1968) looked at sixty-three markets between 1954 and 1966: he found that the UK share of world exports fell from 20.9% to 13.1% but that only 9% of this 7.8% fall was due to the area/commodity composition of trade. The major part of the fall was due to falling share in every market, (p. 312).

Conclusion on Market share/geographical argument:

So Panic and Seward and Barma reject the Market Share arguments as do Panic and Rajan, while Major attributes a very small (7.8%) of the decline to wrong markets. The market share or shift share option is therefore rejected. The UK, by and large, was trying to sell the right products to the right markets.

This leaves on the table the issue of product quality.

3) Poor quality product

Thirlwall and Gibson quote qualitative research that indicates that UK products were inferior in terms of quality, design, reliability and suitability to the overseas markets concerned and that therefore a fall in price instigated by devaluation does not lead to greater orders.

Appendix 3 Part B continued over …

Appendix 3 Part B continued

On page 357 they quote work by the NEDO which looked at the factors affecting export success on an industry by industry basis. The causes for sales failure for each sector are given after the colons:

I. *High tech products: delivery and reliability.*
II. *Machine tools: unit values lower than imports.*
III. *Pumps and valves: technical quality OK, but lack of marketing delivery and after sales service.*
IV. *Electric motors: bad overseas marketing delivery and after sales.*
V. *Electronics poor quality not designed with European market in mind.*
VI. *Clothing: designs and fashion out of line with continental preferences, quality and design sacrificed to keep price down.*
VII. *Car industry: Central Policy Review staff report 1975: poor distribution networks, slow delivery, high costs and low productivity under investment products not suited to market conditions and requirements.*

(Footnote: While localism and generalisations drawn from a single or limited number of experiences lead to confirmation bias the current author can attest to number 7 being true: in Sierra Leone, the first thing mechanics used to do with UK cars was to remove the thermostats. They caused overheating and were an unnecessary cost for the UK car industry. In east Africa, Peugeots took over from UK vehicles after independence because their suspension was better suited to the rough road surfaces, and they set up a better dealer network. Similar evidence exists for the expansion of Volkswagen.

Point vii) above, indicts the UK car industry for failing on every single front.)

Inappropriate product quality reduces the potential both for exports and import substitution. If domestic products suffer the problems outlined above, then if the economy expands imports will rise disproportionately. The NEDC survey of 1965 report looked at the situation with regard to the UK production of machine tools. It found (page 357) similar non-price reasons for the success or failure of the UK machine tool industry: Factors are measured in terms of the percentage of times they are attributed as the cause of sales or non-sales:

Appendix 3 Part B continued over …

Appendix 3 Part B continued …

1) Price 5%.
2) Technological superiority of imports 30%.
3) Machine specifications not available in the UK 21%.

4) Quick reliable delivery of imports 20%.
5) Foreign producers meet special requirements i.e. they are more flexible and customer friendly 8%.
6) Better after sales service 5%.

Thus, UK producers could not source domestic substitutes due to unavailability or inferior quality.

7) Bad Management. The DG of the NEDO found bad management in five industrial sectors (NEDC 1990 p. 358).
   a) Cars b) Clothing and textiles c) Consumer electronics d) Building materials e) tourism.

Conclusion. The NEDO research confirmed (iii) (iv) (v) and (ix) supporting the supply side argument and endorsed adoption of the total quality approach to management as developed first in Japan (p. 359). **Overall:** Post 1960 UK industry failed to supply and market enough internationally competitive products; Cause: bad management leading to lack of flexibility poor after sales service; lack of investment leading to lack of capacity.

Appendix 4 1964 Devaluation Reduced the UK Trade Deficit

Thirlwall Gibson cite four studies which are broadly supportive of Devaluation:

(1) Worswick (1971) estimated the net effect on the balance of trade to +£185m over two years and on the invisible account £330m, producing +£510m over two years.

(2) The NIESR (1972) revised this down to a still very positive £425m.

(3) Artus (1965) for the IMF calculated £940m, by the end of 1971.

(4) Masera (1974) who investigated the J curve effect decided the figure was +£520m up to 1969.

Appendix 5 Ashcroft (2014) Review of Sterling Appreciation 1979-1981

Ashcroft cites a number of studies. **Current author's evaluation in blue.**

(i) Ball and Robertson (1993): there was a lack of need to export in order to pay for imports as the revenue from the North Sea Oil made this unnecessary

Supports contention that North Sea Oil props up sterling.

(ii) Ball (1998) noted dual consequences: a combination of foreign exchange saved and/or the real resource cost of not having to produce the exports of goods and services required.

Again, foreign exchange not earned via exports but received from UK overseas operations, obviating the need for productive investment and propping up sterling.

(iii) Forrysh and Kay (1980): 'escalating exchange rate had a deleterious impact on domestic manufacturing; this was an inevitable consequence, as inevitable as sun rising in the east':

This assumes no exchange rate policy is possible.

(iv) Governor of the bank of England disagreed (1980): he advocated investing the proceeds of North Sea oil.

This appears supportive of this thesis.

(v) Niehaus (1981) North Sea Oil not a major factor in sterling appreciation: it was caused by monetary contraction

Niehaus' view is consistent with sterling being overvalued, but the blame is put on monetarism rather than petrocurrency.

(vi) Ball and Robertson (1993), later agreed with Niehaus: appreciation result of monetary stance.

Appendix 5 continued over …

Appendix 5 continued …

Ashcroft and Thirlwall & Gibson argued North Sea Oil revenue was misspent.

Together with the then Governor of the Bank of England they argue that the proceeds of North Sea Oil should have been spent on investment to improve our productive capacity and help the UK BOP. Instead proceeds were split between consumption and overseas investment. This is highly pertinent because such a policy would have inhibited the rise of the sterling. It should be noted that Norway did indeed invest its oil revenues in national funds and that every Norwegian citizen has 1 million Krone to their name (Thursday, 9 Jan 2014 Reuters reported it amounted to over 1million krone per capita 5.11 trillion Krones ($828.66 billion) for a population of c. 5 million) and a currency that is lower than it otherwise would have been, ceteris paribus.

Appendix 6 Six Factors that Promote Low ERPT

1. Degree of competition.

If importers are fearful of substitution of domestically produced products following a devaluation, they will reduce their prices to maintain market share. If the market were perfectly competitive they would not be able to reduce margins without losing money, so the less perfect the degree of competition the greater their capacity to lower their mark ups.

2. Product differentiation: lack of homogeneity of goods, (artificially achieved if countries introduce regulations to deliberately prevent substitution to protect their home producers).

3. Trade barriers: cross border friction: non-price- non-tariff barriers (often regulatory), tariff barriers and quotas.

4. Local Currency Pricing (exporters quote their prices in the importer's currency) This is also referred to as Pricing to Market/Price Discrimination. Exporters to the local market are wary of high price elasticity of demand enabling local substitutes to price them out of the market. They therefore 'price to market'.

5. Inflation rates: mainstream economists have been keen to show that recent lower ERPT is due to the low inflationary expectations of firms in the era of Taylor-rule-based inflation targeting and rapid monetary response to curb inflation, as per Gagnon and Ihrig (2004).

6. Client relationship and pre-existing contractual obligations. Low short-term ERPT will be induced when agents are tied by existing contractual obligations or by a desire not to upset customers by passing on sudden price increases, as evidenced by Blinder (1988).

Appendix 7

Summary of a Model used by Burstein et al, to explain the very low rate of ERPT following a very deep (41.2%) devaluation (Korea 1997-8).

Like other large depreciations in Asia, the one in **1997/8** was caused by a rapid withdrawal of western currency. Governments were forced to replace this constraint on demand with seignorage (effectively QE) so the consequent depreciation was accompanied by a fall in domestic demand. This can increase import substitution in the CPI basket: the flight from quality (See 3.7.3).

The fall in domestic demand left producers with excess capacity and this resulted in a substitution of production from local to export market. This caused a rapid improvement in the balance of trade but according to Burstein et al a short-term fall in living standards.

They adopt a four-step analysis:

1 They start by assuming PPP holds and by taking the price of non-tradeables from official statistics; by adding their weight to the CPI this reduces the predicted inflation level down to 22.7%, still significantly higher than the actual 6.6%.

2 Their second step is to assume retailing requires distribution services, consisting of transport costs, wholesale costs and retail costs. They then assume that the rate of change in distribution costs equates with the change in non-tradable prices. This reduces predicted inflation down to 14.1%.

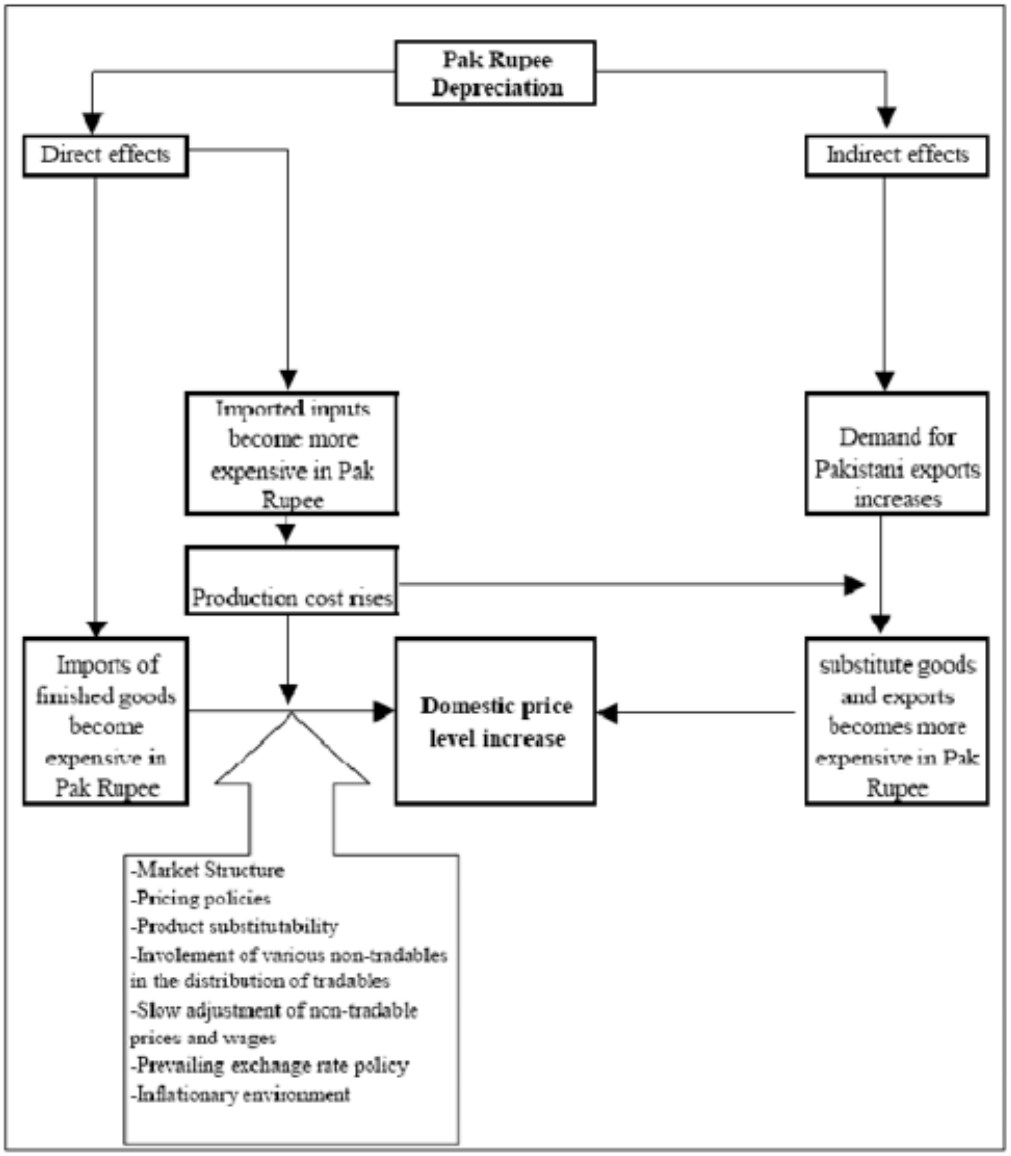
3 Their third step is to assume that some goods that are technically tradable are in fact sold only to the domestic market. They are not good enough for export. The assumption that their prices change in line with non-tradable prices, reduces inflation down to 11.3%.

4 The fourth and final step is to assume that the share of non-tradeables in the CPI increases after depreciation, as inferior local goods are purchased instead of superior foreign goods. This is the flight from quality already referred to. This final step reduced predicted inflation down to c. 6.6% in line with empirical reality.

Appendix 8 The Relationship Between Exchange Rate and Inflation in Pakistan

by Shagufta Kashif p.4

Chart 1: Exchange Rate Pass-through to Domestic prices



Kashif, p.7:11 Our empirical analysis does not support the results of Ahmad and Ali (1999) that a devaluation has a significant impact on inflation. We believe that their results differ from ours because they estimate a model that is based on some fairly restrictive assumptions. For example, they believe there is a complete exchange pass-through to import prices. This assumption is important for their results, but is not supported by recent theoretical models or empirical evidence.

Appendix 9 Evidence on Exchange Rate Pass Through

Tables showing ERPT and distribution costs.

Table A

Authors/Source	Area Applicable	Period	Narrow/Border pass-through	Broad/CPI pass-through	Distribution Costs % of Retail Prices
Campa and Goldberg 2006	OECD AV (21)	Goods 1970-2005	.64	.17	32 to 50
	UK	**Goods 1970-2005**	**.46**	**-.11**	**48**
Gagnon & Ihrig 2004	UK	1981 - 2003		.08	
Burstein, Neves Rebelo 2003	USA Argentina	1992-1997 1991-1996			>40 >60 (70% of RPI consists of non-tradables
Frankel et al	76 countries	1990-2001	.54 -.68	.29 -.59	

Gagnon concludes (2004): '*Large exchange rate movements can coincide with stable consumer prices because firms in affected sectors absorb large changes in their profit margins. In UK after 1992 UK manufacturers increased operating surplus while distributors suffered significant decline in operating surplus. After 1996 the reverse happened.'*

Appendix 9 continued over …

Appendix 9 continued …

Table B

Campa & Goldberg (2006) ERPT

ERPT OECD	
To non-tradeables	.14
Home Tradeables	.42
Imports	.44
ERPT UK	
UK import prices	.46
UK CPI	**-.11 (not significant at 5%)**
UK Distribution costs	.48

Appendix 10

Analysis of effect of investment outflow on UK growth and BOP

Schenk (1994 & 2010) notes the outflow of investment from the UK but argues that reducing it would have added less than 2% to UK gross investment ratio.

This thesis is less sanguine about this, and argues that had the UK invested more domestically the ICOR would have been lower and the UK could have enjoyed a higher level of growth**.**

Schenk (Ibid,) argues that if the capital had been deployed domestically it would have raised the UK gross investment ratio from 16.1% to 17.8%, a rise of 1.7%, putting the UK on a par with Greece and Denmark but still well below Germany, Italy, and Austria and France where it was over 20%. However, Schenk's figures for the ICOR show the UK as having the least efficient capital, with a high figure of 6.7, worsened only by Ireland on 13.8. Germany Austria and Italy boasted ICORs of below 4.

Schenk notes that the high rates of return from overseas investment in sterling contributed nicely to our balance of payments and that preventing this investment and repatriating it would have had a net negative effect on the balance of payments due to the inefficiency of UK capital just noted.

Robert Hall, Director of the Economic Section of the Cabinet, thought capital outflows to the sterling area and the rest of the world were a necessary condition for supporting the balance of payments in the long run. Apart from producing income streams, Hall believed exports were demand rather than supply constrained and urged the expansion of sterling credit to the sterling area as this investment would build up non-dollar demand for UK exports. We note that this model also reflected the neo-colonial practice of western countries providing investment for primary product production which would then supply home industry. The UK having added the value by converting primary products to secondary or tertiary products would then sell these back to the sterling area or the rest of the world.

Appendix 10 continued over ….

Appendix 10 continued …

However, the Bank of England and Otto Clarke at the Treasury favoured cutting back on these capital outflows. Schenk, (Ibid, p.91):

> Economists at the time tended to side with Clarke, for example A.C.L. Day stated 'failing to realize that Britain's wealth depends primarily on the comparative strength of her manufacturing industry, and only secondarily on the profits of international banking and merchanting'.

GDP versus GNI

Income inflow increases Gross National Income but not Gross Domestic Product. If the income is spent on consumption rather than channelled via saving into domestic investment, it does not improve domestic productive efficiency. Incoming funds offset the trade deficit and thereby keep the domestic currency at a higher parity than could otherwise be sustained

Historically, a further downside was that sterling area loyalty/captive customers blunted UK competitiveness.

Encouraging exports to a 'semi-captive' sterling area inhibited long term development because the sterling area bought out of custom and practice and sterling obligation rather than seeking better value elsewhere. This, echoing the ossification argument, reduced pressure on domestic manufacturing to up its game. With Independence, the Commonwealth gradually weaned itself off sterling, and British manufacturers found their products rejected in favour of those from western competitors.

Appendix 11 A Sovereign Wealth Fund

As the then Governor of the Bank of England recommended in 1980, the UK could have created a sovereign wealth fund from the proceeds of its oil, as Norway did, but failed to do this.

A sovereign wealth fund could now be funded through taxation, perhaps taking an obligatory contribution from pension funds or from national insurance contributions or from a wealth tax. This would be controversial and even more so would be to use money creation to buy foreign assets. The feasibility of such proposals is beyond the scope of this thesis but there is no a priori reason for not investigating such possibilities. Quantitative easing or 'money printing' was considered heretical by many governments and mainstream economists (and still is by some), but is now a fact of life. We surmise that previous QE has effectively inflated assets and rather than solving the crisis has supported the flawed structure of the UK economy. QE for a Sovereign Wealth fund would be aimed at correcting the structure of the UK economy.

Appendix 12 Further Work

1. The cost-base differentials between UK and our trading partners could be quantified in multi-sectoral GVA analysis.
2. How and by how much should incoming capital flows be restricted?
3. While venture capital for start-ups is available in the UK, there is evidence that the UK stock market is not supplying the capital needed for businesses to grow into global players. The recent loss of ARM to overseas purchasers exemplifies this problem.
4. Are the GDP figures for the UK financial sector fit for purpose? If the income of those in real estate is a slice of asset price inflation, caused by the banks' creation of money ex-nihilo[37], a portion of the GVA of this sector is fictitious. If so, this strengthens the case for manufacturing and new technology rather than financial services.
5. Does financialisation keep markets honest or misallocate capital? Michael Hudson states (Ibid, 2015), money is easy but dear, when it should be difficult but cheap. Is the financial sector, in part, a rentier sector imposing a burden on the economy? Further work on themes explored in the Spider's Web, (John Christensen) must be done, to work out how much capital is flowing in to the UK from tax havens and propping up sterling.

[37] As Ryan Collins et al and Haldane of the Bank of England understand, (Collins, J.R et al ,2011) money is created ex-nihilo by the banks and the reserves are forthcoming ex-post because central banks know that if they fail to make them available the whole system will collapse.

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